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Anacostia Wet Weather Receiving Water Monitoring Survey: Event 3

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The Naval Research Laboratory (NRL), working in conjunction with the Metropolitan Washington Council of Governments (MWCOG), monitored overflows of the combined sewer system (CSS) and separate storm water system (SSWS) in the Anacostia River in the District of Columbia. The NRL/MWCOG contribution is part of a larger effort by the District of Columbia Water and Sewer Authority (WASA) to develop a Long Term Control Plan (LTCP) for the combined sewer system in the District of Columbia.

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INTRODUCTION

The Naval Research Laboratory (NRL), working in conjunction with the Metropolitan Washington Council of Government (MWCOG), monitored overflows of the combined sewer system (CSS) and separate storm water system (SSWS) in the Anacostia River in the District of Columbia. The NRL/MWCOG contribution is part of a larger effort by the District of Columbia Water and Sewer Authority (WASA) to develop a Long Term Control Plan (LTCP) for the combined sewer system in the District of Columbia.

NRL monitored four rain events. This report includes the data, QA/QC controls and analysis of the data for Event 3. The Event 3 sampling began on May 14, 23:53 and ended May 16, 20:40. Field personnel maintained a log of the field and laboratory conditions. Copies of these notes are in Appendix 1.

Sampling was conducted at 5 stations located near CSS outfalls on the Anacostia River. The outfalls are located at the following locations (See Graphic A for location of stations):

Station 1: Located beneath the New York Ave. Bridge at the DC/Maryland district- / stateline.
Station 2: Located beneath the Benning Rd. Bridge near the PEPCO Power Station.
Station 3: Located at the railroad bridge at the northern end of Anacostia Park
Station 4: Located beneath the Anacostia Bridge (11th Street)
Station 5: Located at Douglas Bridge (South Capital Street)

Event Station_ID	Routine Station_ID	Description	Latitude	Longitude	River_mile
1	FA01	DC/MD Line	38.9165	-76.9443056	6.56
2	FA02	Benning Rd	38.8968611	-76.9625833	4.57
3	FA03	Penn. Ave	38.8785833	-76.9669444	2.85
4	FA04	11th St.	38.8715	-76.9901389	2.1
5	FA05	S. Capitol St.	38.8680833	-77.0068333	0.97

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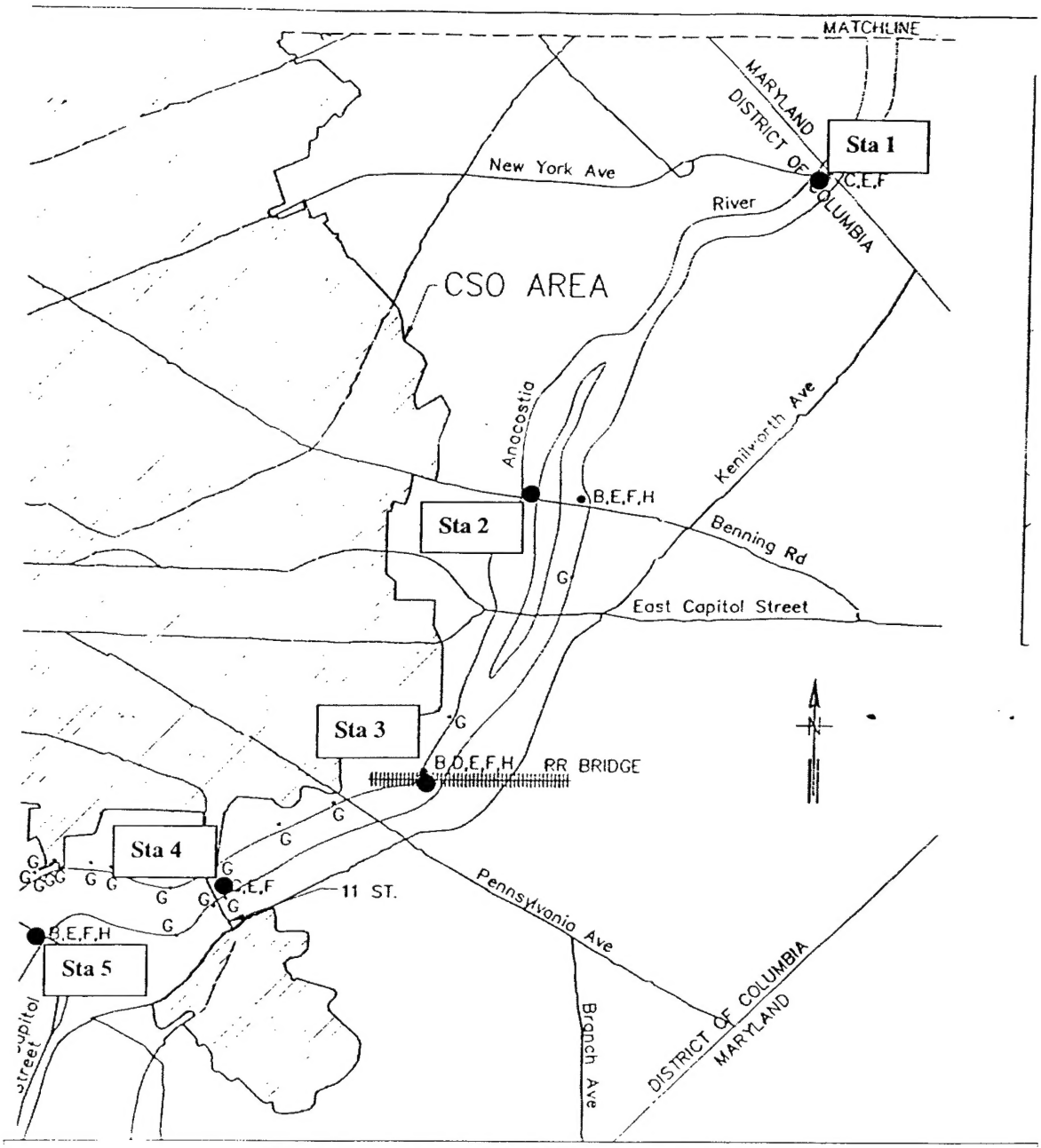


Graphic A: Anacostia River sampling stations

Monitoring Location	Outfall	Overflow Volume (million gallons)	Nearest Station
Fort Stanton	007	0.32	Station 5
B St./ New Jersey Ave	010, 011, 011a	Out of Service	Station 5
Tiber Creek	012	Out of Service	Station 5
Northeast Boundary	019 (swirl effluent)	4.14	Station 2/3
	019 (bypass)	0.18	Station 2/3
Total		**4.64**	

4.64 million gallons of overflow were measured by Greeley and Hansen Engineers during Event 3, but the B St./ New Jersey Avenue and Tiber Creek outfall gauges were "Out of Service," so the total overflow was greater than the 4.84 million gallons reported.

Quality Assurance / Quality Control

Performance Evaluation (PE) data from Ammonia, Total Oxidizable Nitrogen (TON: NO_3^- and NO_2^-), Nitrite (NO_2^-), o-Phosphate, Total Phosphate and TKN from water pollution (WP) and water source (WS) samples were submitted to Analytical Products Group on September 15, 2000. For the WP and WS samples, our laboratory passed all analyses with the exception of Total Phosphates. Our analysis of this parameter for both the WP and APG+ samples was 0.6 mg/L higher than the accepted range (APG+ is a low concentration component of the WP set). Considering the accuracy of the other PE measurements we reported, the problem was doubtless with the persulfate digestion procedure. Chesapeake Analytical Laboratory, an independent lab contracted by Geo-Centers, Inc. to analyze TKN samples, passed the WP and WS evaluations for TKN. Results from the performance evaluation are included in Appendix II. The results reported for the WS samples were not included in the final reports for Events 1 & 2.

Chain of Custody (COC) forms and temperature blanks accompanied the transfer of all samples from the field lab to NRL and from NRL to Chesapeake Analytical Laboratory. Because a large number of samples transferred, it was impossible to itemize each sample in the COC forms. Instead, sets of samples (e.g. all TKNs from cycles 4-6) were recorded as a single entry. This simplification made it possible to maintain efficient sample transfer during the event. COC forms are found in Appendix III. Chesapeake Analytical Laboratory (CAL), Inc. (301-932-4775) of Waldorf, MD was contracted to process and analyze TKN samples. COC forms from CAL are included in Appendix III. QA/QC requirements from CAL are in Appendix II.

METHODOLOGY

Sampling

Qualified NRL employees and contractors collected samples from each of the stations every 4 hours. The field technician log sheet is in Appendix I. We maintained the rigid sampling rate of once every 4 hours. The beginning of each sampling cycle (hereafter referred to as "cycles") almost exactly corresponded with the four hour scheduling. Certified US Army Corps of Engineer personnel piloted the boat. Water samples were collected from 1m depth in a Van Dorn Bottle and transferred to appropriate storage containers (described below) for processing and analysis.

Biological Oxygen Demand (BOD)

Methods

Duplicate samples were collected in 60ml BOD bottles with ground glass stoppers. The 5 Day BODs were determined as described by EPA method 405.1. The procedure to determine the 5 day BOD follows the standard technical procedure (SM5210B: Standard Methods for the Examination of Waters and Wastewaters, 20th edition, 1998). Dissolved oxygen (DO) was measured by potentiometric titration. The analytical determination follows the method described by Oudot et al. (1987). See the Quality Assurance Project Plan for reference (on file at MWCOG).

QA/QC

Duplicate samples were run for every sample although QA/QC scheduling required duplicate samples once every 20 samples. The titrant (0.14M sodium thiosulfate) was standardized with a standard KIO_3 solution during the event. Spikes and analytical standards are not applicable to this method. Because the residual DO in all bottles after 5 days was >1 mg/L, dilution water blanks and glucose/glutamic acid checks were not necessary. Laboratory data sheets for the BOD analysis are located in Appendix IV.

Field Problems

During Event 3 many of the initial DO concentrations were low enough and the BOD high enough that the residual DO at day 5 was less than 1 mg/L. When the DO in the incubation flask is below 1 mg/L aerobic bacteria responsible for the BOD are inhibited, thus the time averaged depletion of DO (which is the BOD) is underestimated. In such cases, the initial sample should be diluted with dilution water, as is specified in SM5210B. Dilution water serves to both provide higher initial DO, which provides more DO for the incubation, and dilutes the amount of organic material that fuels BOD. Dilution factors are used in calculating the BOD to account for the initial dilution. Such a rapid depletion of DO was not observed in Events 1&2, however, so the condition experienced in Event 3 was not expected. As a result, many of the BOD values reported from Event 3 underestimate the true BOD. Suspect data are indicated in the data table.

Total Suspended Solids and Volatile Suspended Solids (TSS and VSS)

Methods

Duplicate samples were collected in 250ml Nalgene bottles. The full volume of the bottle was filtered through a preweighed 48mm GFF filter in the field lab. Loaded filters were stored at –20°C until analysis. The TSS and VSS concentrations were determined as described by EPA method 160.2 and 160.4, respectively. The procedure follows the standard technical procedure, SM2540D&E, respectively (Standard Methods for the Examination of Waters and Wastewaters, 20th edition, 1998).

QA/QC

Duplicate samples were run for every sample although QA/QC scheduling stated that duplicate samples were required once every 20 samples. Spikes and analytical standards are not applicable to this method. Filter blanks for VSS analysis were determined for each set of samples. Equipment Blanks and Field Blanks were collected and analyzed as noted in Appendix II. Laboratory data sheets for TSS and VSS analysis are in Appendix IV.

Field Problems

None.

Nutrients (NO_3^- & NO_2^- as N, NH_4^+ as N, o-PO_4^+ & Total PO_4^-)

Methods

Duplicate samples were collected in 250ml Nalgene bottles. Samples were filtered through ashed (450°C for 4 hrs) 48mm GFF filters and collected in clean 60ml Nalgene bottles. Samples for N as nitrate & nitrite (also known as and hereafter referred to as Total Oxidizable Nitrogen (TON)), N as ammonia and o-phosphate were collected in one bottle, and samples for total phosphate were collected in another bottle. Samples were frozen at –20°C until analysis (TON, NH_4^+ and o-PO_4^+) or digestion (Total PO_4^+). TON, ammonia and phosphate (for total and o-phosphate) were analyzed on an Amicron Nutrient Analyzer (OI Analytical, College Station, TX) following the methods reported below.

TON concentrations were determined as described by EPA method 353.2, "Determination of nitrite by semi-automated colorimetry." The procedure follows the standard technical procedure, SM4500-NO_3^- I, Cadmium Reduction Flow Injection (Standard Methods for the Examination of Waters and Wastewaters, 20th edition, 1998). This method reduces the ambient nitrate to nitrite, and the combined nitrite (reduced nitrate + ambient nitrite) is analyzed.

Ammonia concentrations were determined as described by EPA method 350.1, "Determination of ammonia by semi-automated colorimetry." The procedure follows the standard technical procedure, SM4500-NH_3G, Automated Phenate Method (Standard Methods for the Examination of Waters and Wastewaters, 20th edition, 1998). Orthophosphate concentrations were determined as described by EPA method 365.1, "Determination of phosphate by semi-automated colorimetry." The procedure follows the standard technical procedure, SM4500-PG, Flow Injection Analysis for Orthophosphate (Standard Methods for the Examination of Waters and Wastewaters, 20th edition, 1998).

Total phosphate concentrations were determined by the standard technical procedure, SMP4500-PH, "Manual Digestion Flow Injection Analysis for Total Phosphorus" (Standard Methods for the Examination of Waters and Wastewaters, 20th edition, 1998). Organic phosphorus was converted to phosphate by the persulfate digestion procedure.

QA/QC

Duplicate samples were run every 10 samples. Method blanks and laboratory control samples were run according to schedule. Equipment Blanks and Field Blanks were collected and analyzed as noted in Appendix II. Laboratory data sheets for the nutrient analyses are in Appendix IV.

Because of instrumental instability, ammonia data generated failed QA/QC. The internal and continuing calibration samples run with the ammonia samples were well beyond acceptable tolerances. As a result, ammonia data from Event 3 are not presented in this report. They will be provided to MWCOG at a later time, when the instrumental issues have been solved.

Field Problems

None.

Dissolved, Total and Particulate Organic Carbon (DOC, TOC & POC)

Methods

Duplicate samples were collected in 250ml Nalgene bottles. TOC and DOC samples were transferred from the sample bottles into precombusted (450°C for 8 hrs) glass amber ampoules via syringe. Samples for DOC analysis were filtered through precombusted (450°C for 4 hrs) 13mm GFF filters. Twenty microliters of phosphoric acid (85%) was added to the ampoules prior to adding the sample. Ampoules were heat sealed and stored at 4°C until frozen at NRL prior to analysis. TOC and DOC concentrations were determined by the standard technical procedure, SM5310B (Standard Methods for the Examination of Waters and Wastewaters, 20th edition, 1998). Analysis was performed on an MQ1001 Total Organic Carbon Analyzer (MQ Scientific, Washington).

QA/QC

Duplicate samples were run for every sample. Analytical standards (or Laboratory control samples (LCS)) were run once per 20 samples, or once per batch, whichever was greater. Because of a slight drift in the instrumentation, the analytical standards were used to continuously update the standard curve. Equipment blanks and field blanks were collected and analyzed as noted in Appendix II. Laboratory data sheets for DOC, TOC and POC analyses are in Appendix IV.

Field Problems

None.

Total Kjeldahl Nitrogen (TKN)

Methods

Duplicate samples were collected in 250ml Nalgene bottles. Samples were preserved at pH<2 with H_2SO_4 and stored at 4°C during delivery to NRL and at NRL. Samples were analyzed by Chesapeake Analytical Laboratory, Inc. of Waldorf, MD by EPA Method 351.2.

QA/QC

Duplicate samples were run every 10 samples. Method blanks, matrix spikes and laboratory control samples were run according to schedule (See Appendix II). Equipment blanks and field blanks were collected and analyzed as noted in Appendix II. Raw data sheets received from CAL are in Appendix IV.

Field Problems

None.

Water Quality Parameters (Temperature, Conductivity, Dissolved Oxygen, pH & Turbidity)

Methods

Temperature (°C), conductivity (µS/cm), dissolved oxygen (DO) (mg/L) and pH were measured with a Hydrolab Datasonde 4 Water Quality Multiprobe (Hydrolab Corporation, Austin TX).

QA/QC

The instrument was maintained according to manufacturer's specifications and calibrated prior to each field event. Duplicate measurements were scheduled to be recorded once every 10 readings. Duplicate measurements are reported in Table 9.

Field Problems

Prior to this project, the Datasonde 4 probe was sent to the manufacturer for repairs. The nephelometer was mistakenly removed while being repaired and we were unable to get the nephelometer replaced for any of the storm water events.

RESULTS

Data from Event 2 is presented in the following order: Biological Oxygen Demand (BOD), Total Suspended Solids and Volatile Suspended Solids (TSS and VSS), Nutrients (NO_3^- & NO_2^- as N, NH_4^+ as N, o-PO_4^+ & Total PO_4^-), Dissolved and Total Organic Carbon (DOC and TOC), Total Kjeldahl Nitrogen (TKN) and Water Quality Parameters. A brief description and interpretation of the data is provided in this section. In conjunction with the plots provided, this interpretation is intended to provide some spatial (station averages and cycle summaries) and temporal (cycle averages and station summaries) insight. Hopefully, this preliminary perspective will serve as a useful guide for directing model development and detailed statistical analysis.

Data tables for each parameter are in the TABLES section. Field duplicate data are included or calculated into the tables. In some instances, a standard deviation is reported. This standard deviation was calculated using the duplicate values. It is recognized that a standard deviation should be calculated from a set of three samples, so consider the calculated standard deviations with that in mind.

The plots referred to in the data interpretation are in the FIGURES section. The first figure for each parameter contains a plot with the cycle averages and a plot with the station averages. The second figure contains a station summary, which plots the parameter value at each station against the cycle number. Cycle numbers represent each of the sample cycles and are separated in time by approximately 4 hours. For an exact cycle time see the collection time provided in the corresponding data table (TABLES Section). The third figure of each dataset contains a cycle summary that plots the parameter value against each station samples during the cycle.

Detailed coliform data from Event 3 was provided in a separate report submitted by Dr. Joanne Jones-Meehan. It is advisable to obtain those reports to compare the biological and chemical data. The complete coliform dataset is not included in this report. However, to help bridge the two reports, a brief description of the coliform data and representative plots courtesy of Dr. Joanne Jones-Meehan are included. The brief description of the coliform data precedes the results for this report and the representative plots are found in the FIGURES section.

Discussion of the data in this report will be stated in relative terms. For instance, rather than stating Station 2 had a BOD of 3.4mg/L, which was 2.1mg/L higher than that measured at Station 1, this report will state that the BOD at Station 2 was higher than the BOD measured at Station 1. For exact measurements, refer to the figures and data tables.

Coliforms

Event 3 provides a good example of how dramatically a single rain event can effect the water quality of the Anacostia River. Samples collected several days before and after Event 1 had relatively small total coliform counts (Fig 1). With the rain, however, came a huge influx of coliforms. During Cycle 1 900,000 cells/100 ml were measured from Station 5 and 500,00 cells/100 ml were measured from Station 3. The maximum total coliform count was identical in location and magnitude to the maximum from Event 2. In comparison, however, the total coliform inputs from Event 3 were limited to Cycle 1. Total coliform counts decreased during the successive cycles. Fecal coliform counts followed a similar pattern of reaching their maxima during Cycle 1. Cell counts were an order of magnitude less than the total coliform counts, which is not unusual. Cycle 7 provides some indication that there was additional input of fecal coliform impacted material into the river (Fig 2). The counts at all stations, barring Station 3, were higher than the samples collected during Cycle 4. An interesting note regarding the data collected from Event 3 is that the O St./New Jersey Ave. pump station was reported as "Not in Service" during the Event 3 dates. Despite the lack of overflow data, the total and fecal coliform data provide strong evidence that there was a CSO event in the immediate vicinity of the O St. New Jersey Ave Station following the rain that prompted the Event 3 sampling.

Biological Oxygen Demand (BOD)

The data are presented in Table 1 and the plots appear in Figures 3-5. BOD data from Event 3 should be viewed with caution for reasons explained in the Methods:Field Problems section. Station 2 appears to have had the lowest BOD, but since it had the lowest initial DO, it was the most likely to have experienced the greatest BOD inhibition during the 5 day incubations. Low initial DO in the incubations inhibited the potential BOD in these and many other samples. The suspect data from Event 3 are indicated in Table 1.

Total Suspended Solids and Volatile Suspended Solids (TSS and VSS)

The data are presented in Table 2 and the plots appear in Figures 6-8. The most dominate feature of the suspended solids data is the loading observed at stations 1-3 during Cycles 6&7 (Fig 7:A-C). This time and location correspond to the second smaller input of fecal coliforms into the river. This pattern is remarkably similar to that of Event 2 where the second overflow event provided a pulse of suspended solids near Stations 2&3. It is interesting to note that during both events, the overflow event at Station 5 (which led to extremely high coliform counts) had no measurable effect on the particle load. On the other hand, the overflow at the upper portion of the river results in a smaller increase in coliforms, but a marked increase in suspended solids. The particle load from this input can be traced downriver in the later cycles of the event (Fig 8:H-J). There also appears to have been an increase of suspended solids during the final two cycles at Stations 2&3).

Nutrients: TON (Total Oxidizable Nitrogen -- NO_3^- & NO_2^-), NH_4^+ as N, o-PO_4^+ & Total PO_4^-

Ammonia and TON: The TON data are presented in Table 3, and the plots appear in Figures 9-11. Cyclical changes were not evident (Fig 9:A), and the highest TON concentrations were measured at Station 5. The TON data provides no indication of the overflow events.

Phosphates (Ortho and Total): Ortho and total phosphate data are presented in Table 3, and the plots appear in Figures 12-14. Total and ortho-phosphate were consistently low throughout the river and showed minimal spatial or temporal variation (Fig 12:A&B). The exception to the lack of variability were two high measurements – one occurred at Station 1, Cycle 1 (Fig13A) and the other at Station 2, Cycle 2). Whether or not these pulses coincide with input for overflows is difficult to say, as they do not seem to coincide with the apparent overflow events where high coliforms and particulates were measured.

Dissolved, Total and Particulate Organic Carbon (DOC, TOC & POC)

The data are presented in Tables 4-7 and the plots appear in Figures 15-17. Figure 15:A indicates a slight increase in the TOC and DOC between Cycles 4-7 and a second increase near the end of the event between Cycles 9-11. These increases are not pronounced and would not merit attention were it not for the fact they correspond to the increases observed in the suspended solids data. Suspended solids and organics also correlated in Event 2. The station average pattern between the suspended solid and organic data also correlate, which suggests the source of suspended solid and organic material is the same and limited to the upper river.

Total Kjeldahl Nitrogen (TKN)

The data are presented in Table 8, and the plots appear in Figures 18-20. Overall, TKN showed very little variation during Event 3. The highest average concentration was measured at Station 2, due mostly to a relatively high value measured during Cycle 10. Nevertheless, Station 2 had the highest concentration for 8 of the 10 cycles for which data are available. The peak observed at Station 10 parallels increases observed in the suspended solid and organic data.

Water Quality Parameters

The data are presented in Table 9, and the plots appear in Figures 21 and 22. Average cycle temperature ranged between 24 and 25°C (Fig 21:A). Temperatures were slightly warmer downriver (Fig 22:A). pH remained constant for the duration of the cycle and was highest at Station 5 (Fig 22:B). Specific conductivity remained constant during Event 3 except for a marked decrease between Cycles 4&5 (Fig 21:D). During this same period, the temperature rose slightly (Fig 21:A) and the DO increased substantially (Fig 21:C). The DO increased during two intervals – between Cycles 4&5 and between Cycles 8&10 (Fig 21:C). These indicators may represent outfall events and match up with periods of rapid change for other parameters (e.g. TKN:C8-10; TSS:C4-7

& C9-10; SS: C4-7 & C10-12). During Event 3, the DO was near hypoxic conditions (<2.0mg/L) for a significant number of the measurements.

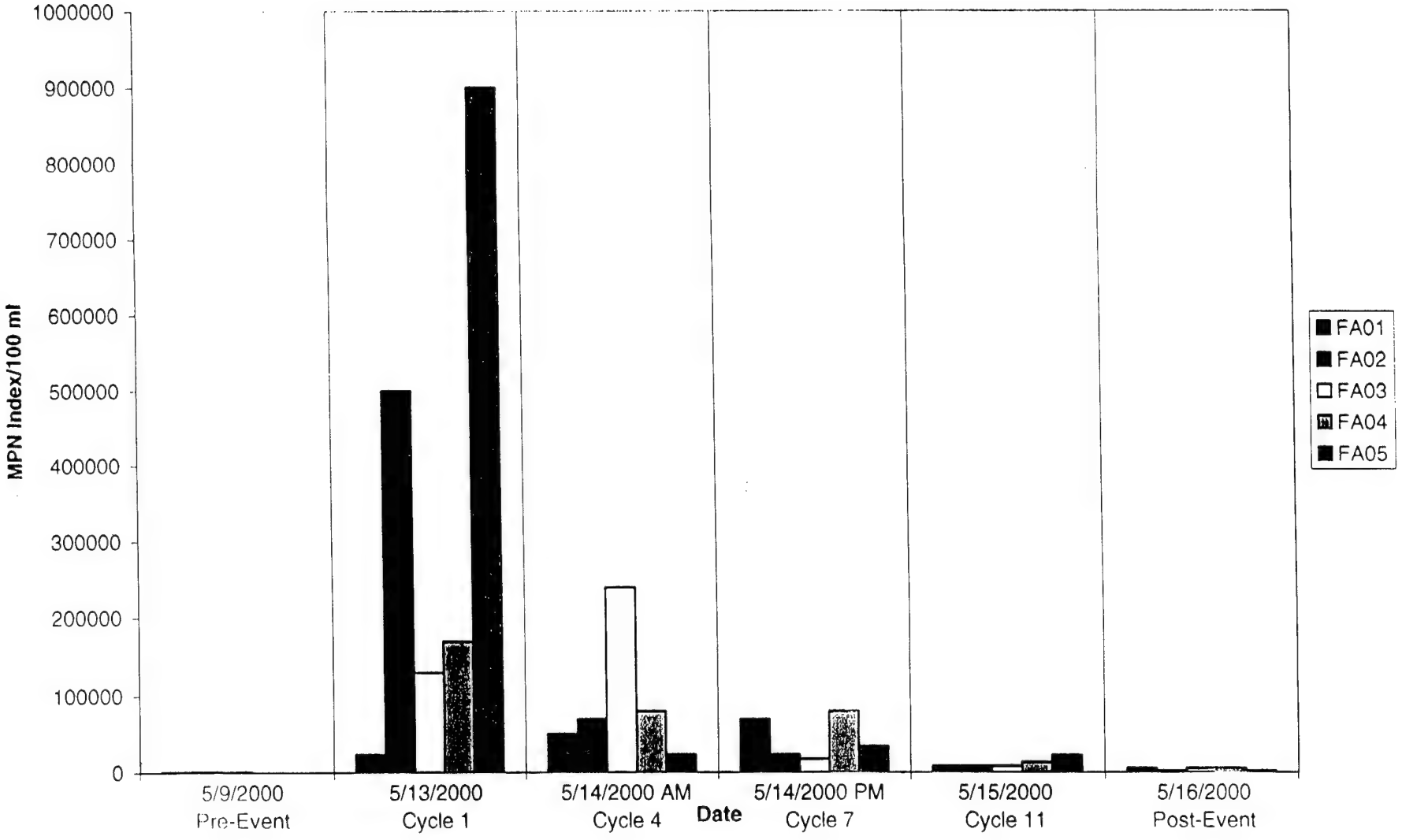
SUMMARY

The measured overflow of 4.64 million gallons into the Anacostia was far less that the 80.04 million gallons measured during Event 2. However, the outfalls at B St./ New Jersey Ave and Tiber Creek, which dump near Station 5 were out of service, so the relative measurement if 4.64 million gallons is assuredly an underestimate of the actual discharge from the monitored overflows. Despite the disparity in overflow between the two events, the water quality indicators (in terms of concentration, spatial and temporal distribution) were remarkably similar. During both events the coliform counts were similarly high during Cycle 1 at Station 5. During later cycles (4-7) during both events, a smaller input of coliforms was measured near the upper river Stations 2&3. These stations, for both events, were also characterized by an increase in suspended solids and organic carbon.

During the latter stations (9-12) of this event there was a slight increase in the suspended solids, organic carbon and TKN concentrations, but no apparent increase in coliforms. This is the first instance where there has been a change in the general water quality without a change in the coliform counts. Water quality parameters measured with the Hydrolab (temp, pH, DO and spec. cond.) also suggest a marked change in the background water quality.

FIGURES

Figure 1. Anacostia River (Method #9221B: Total Coliforms)



5/13/2000
Cycle 1

Figure 2. Anacostia River (Method #9221E: Fecal Coliforms)

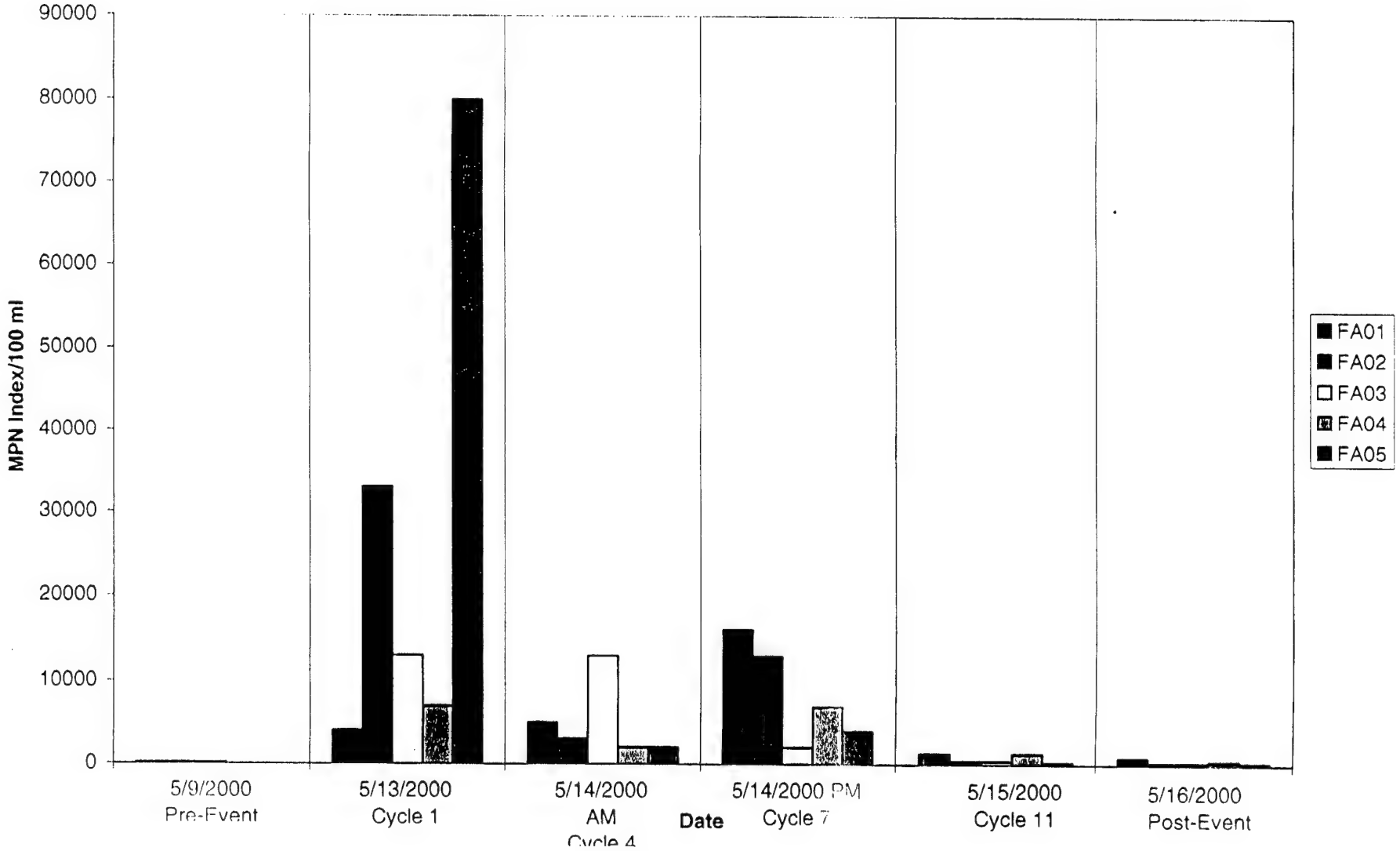
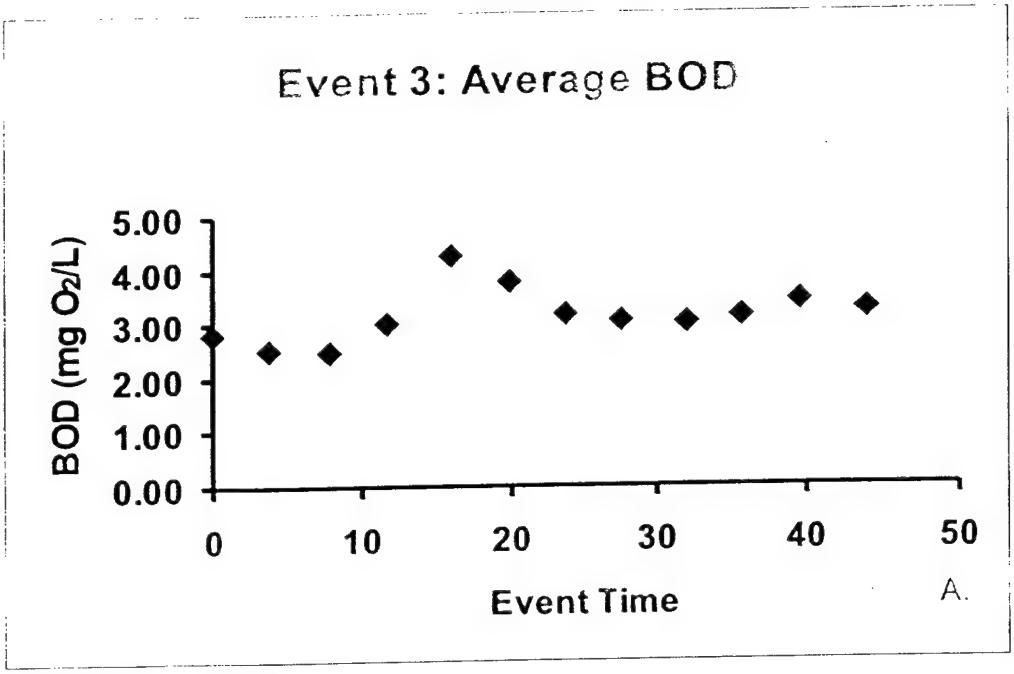


Figure 3: BOD, Event 3



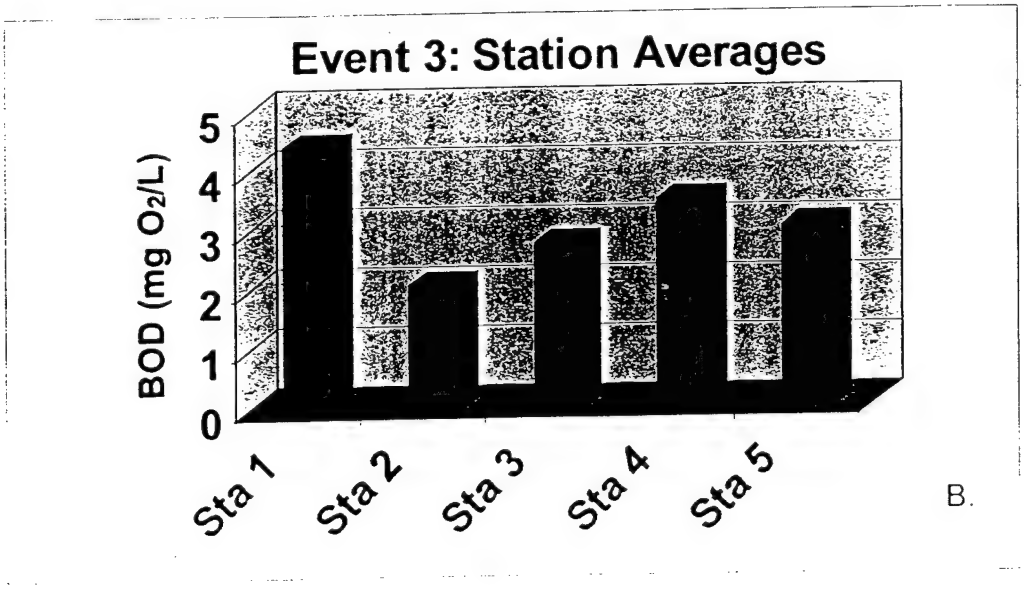
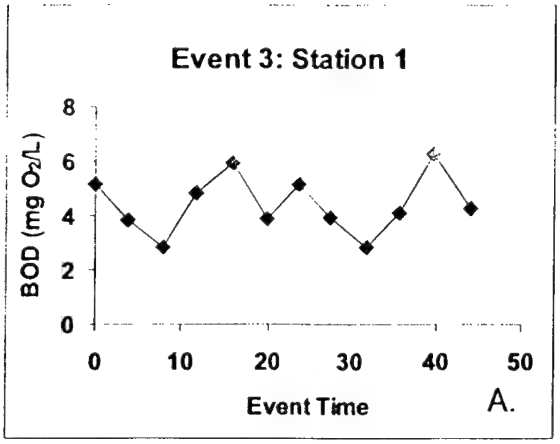
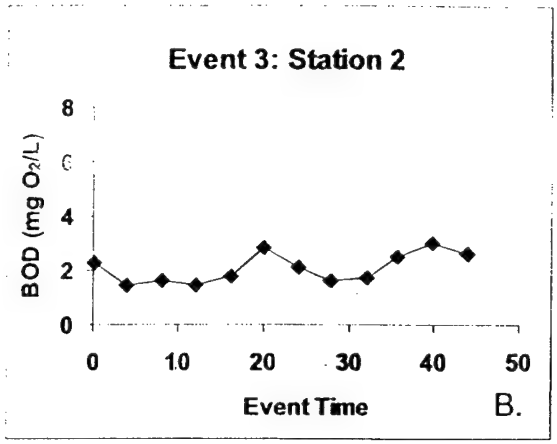
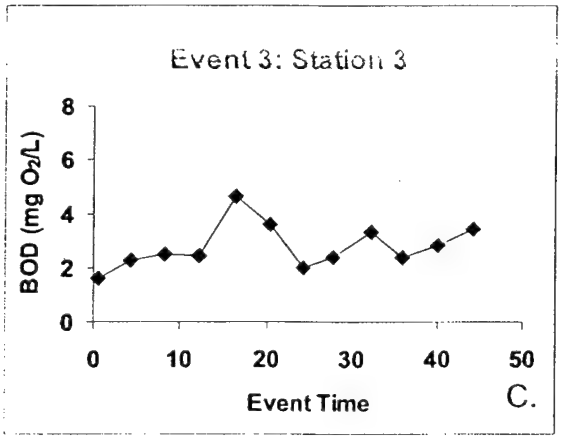
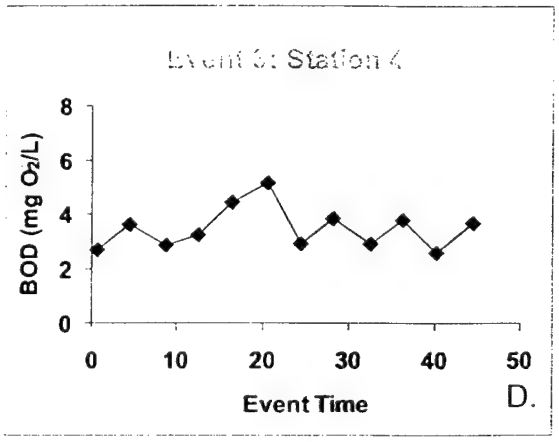


Figure 4: BOD, Event 3 Station Summary









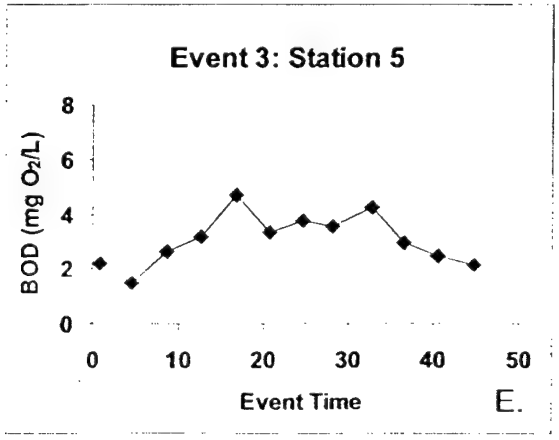
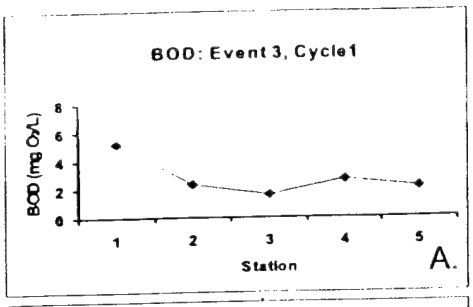
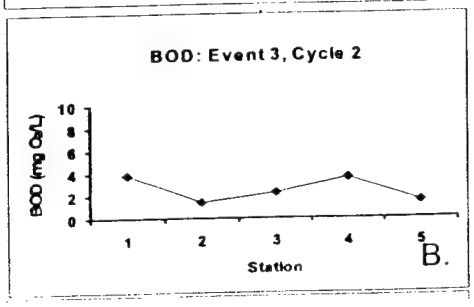
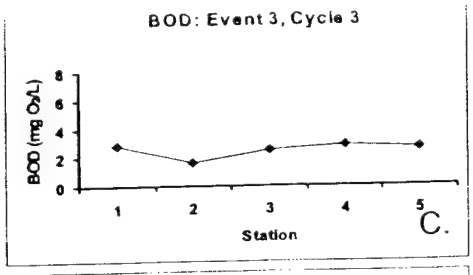
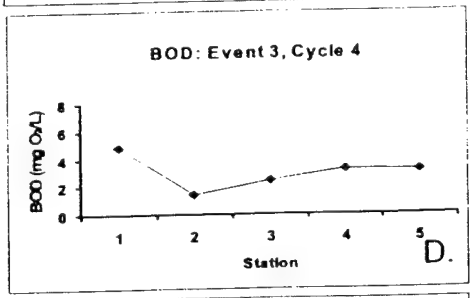


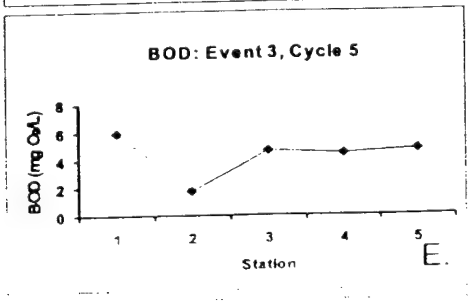
Figure 5: BOD, Event 3 Cycle Summary

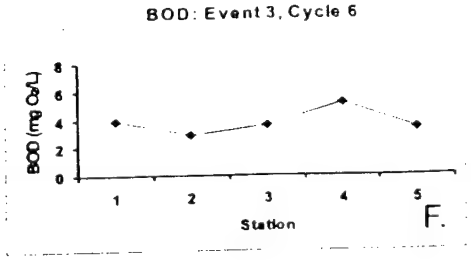


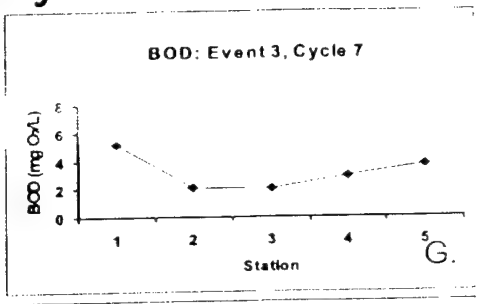


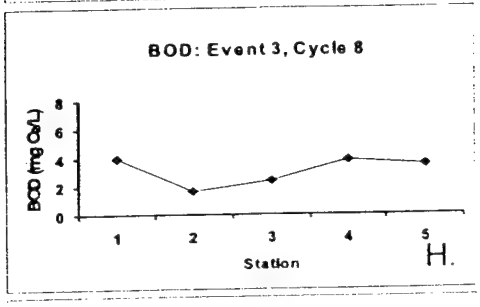


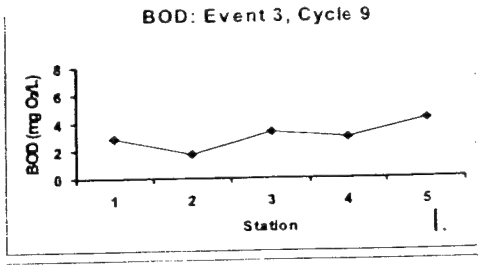


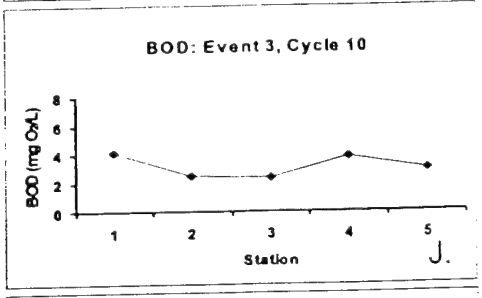


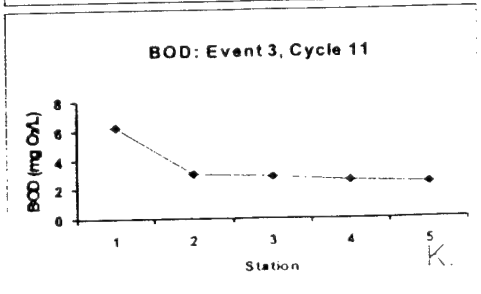












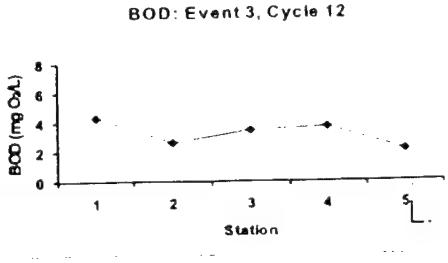
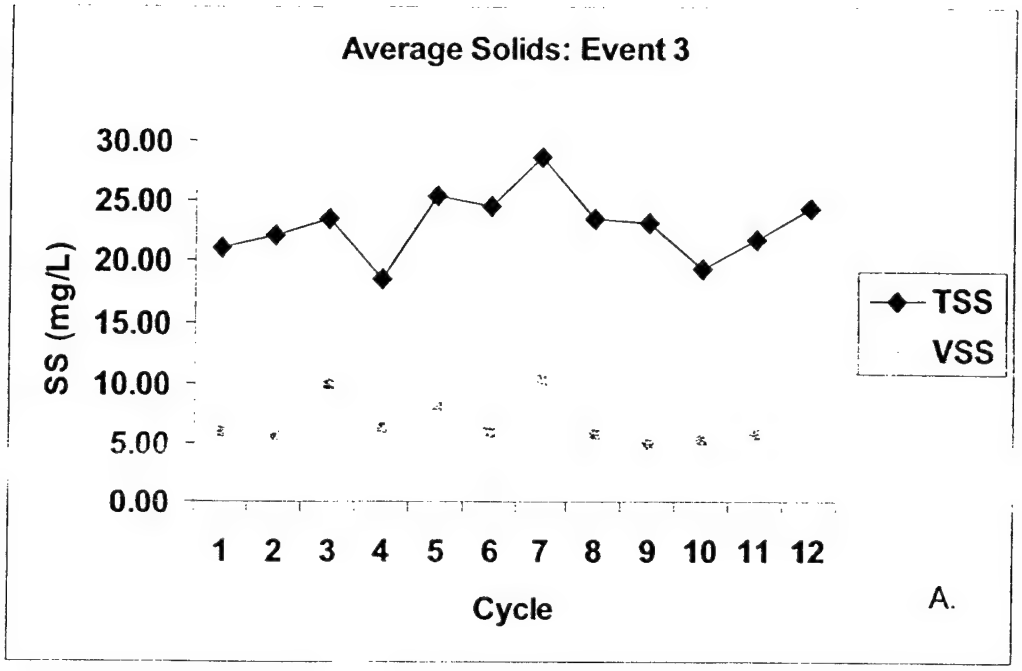


Figure 6: Suspended Solids, Event 3



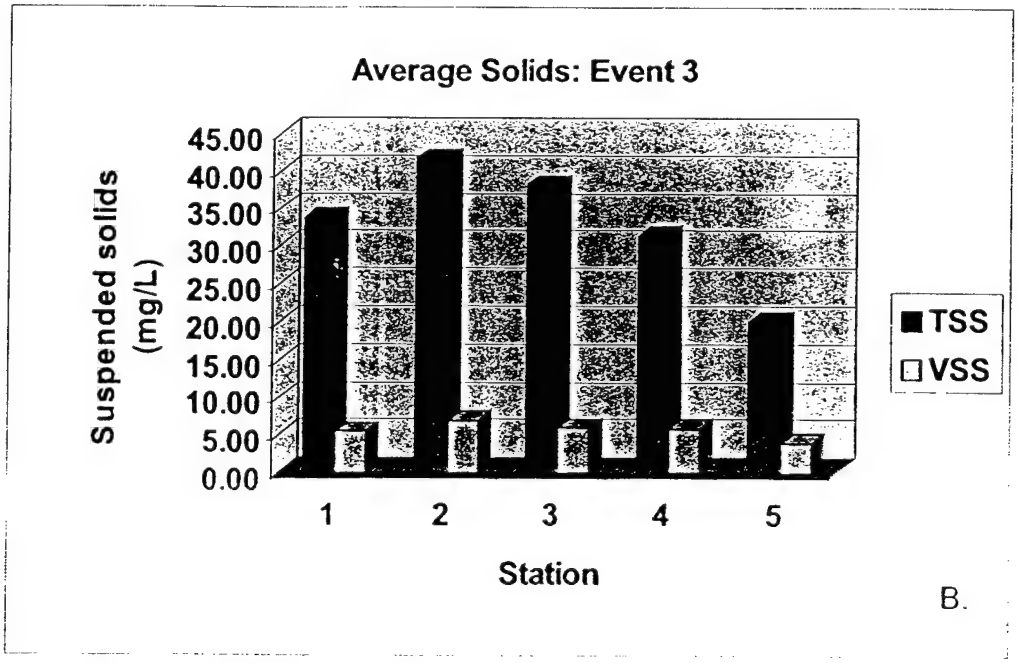
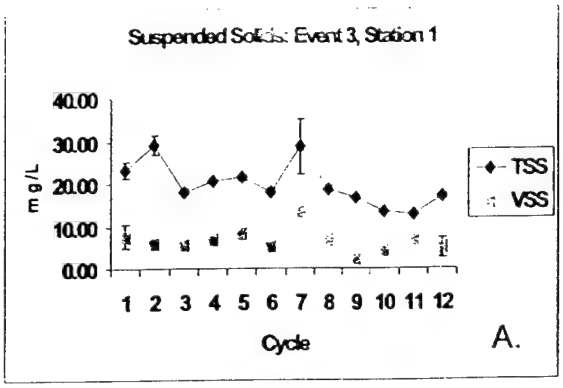
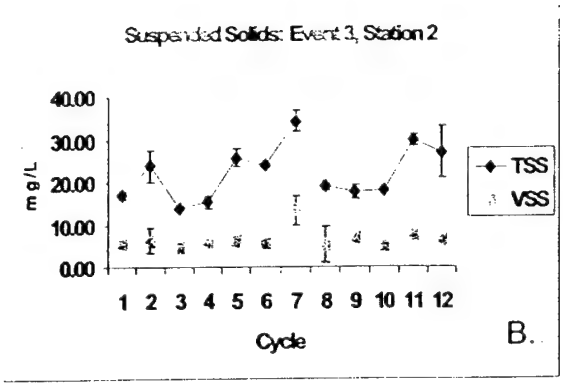
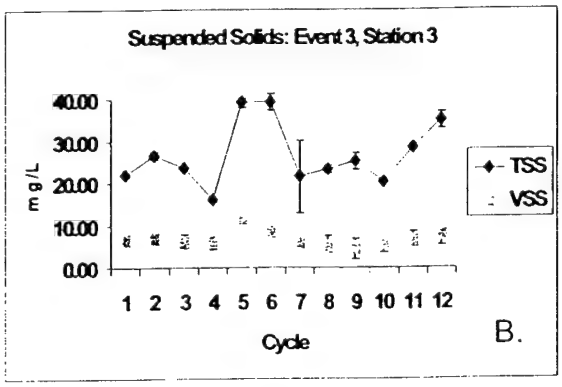
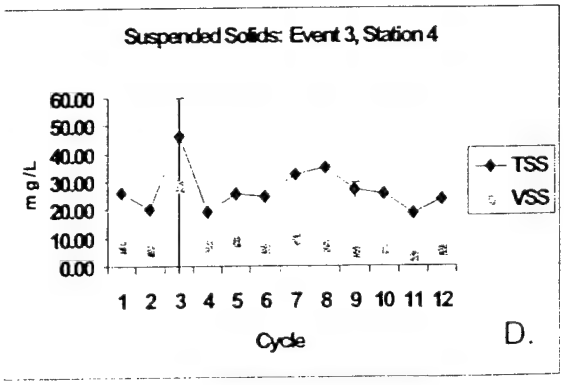


Figure 7: Suspended Solids, Event 3, Station Summary









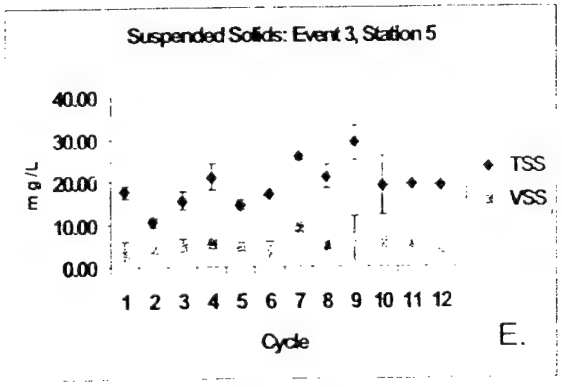
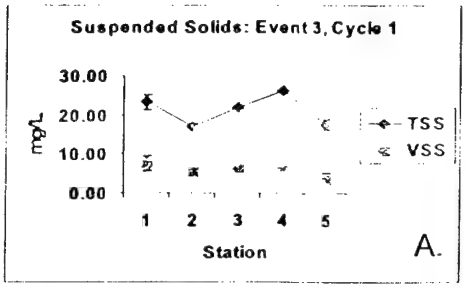
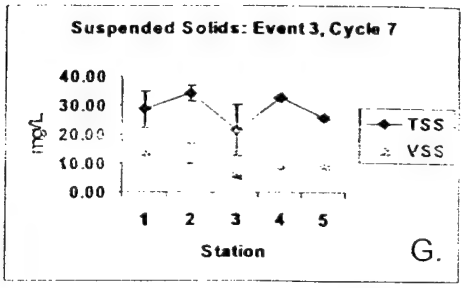
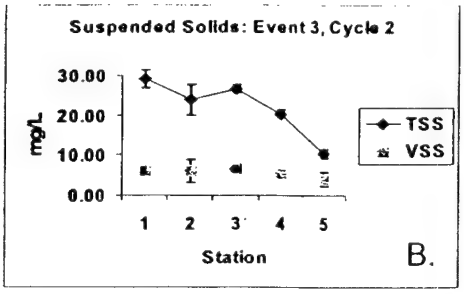
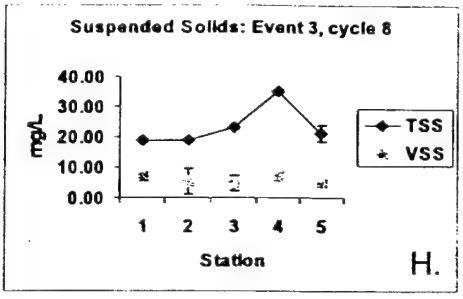


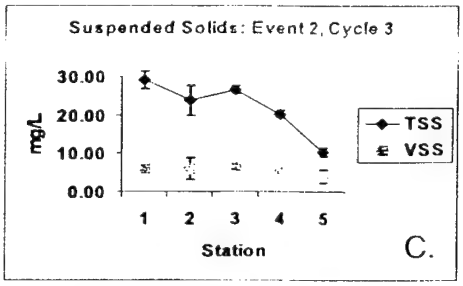
Figure 8: Suspended Solids, Event 3, Cycle Summary

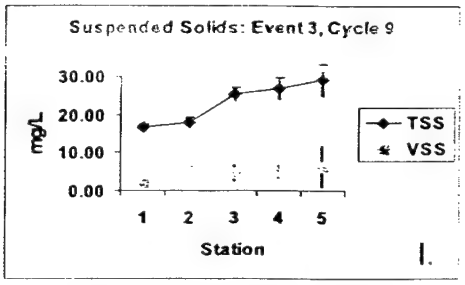


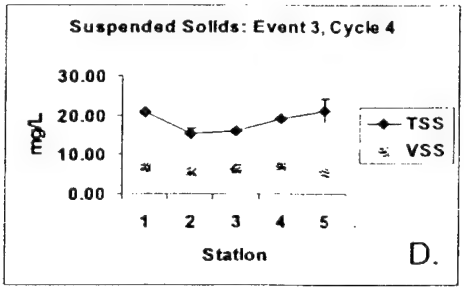


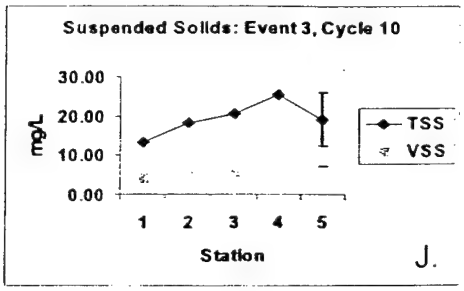


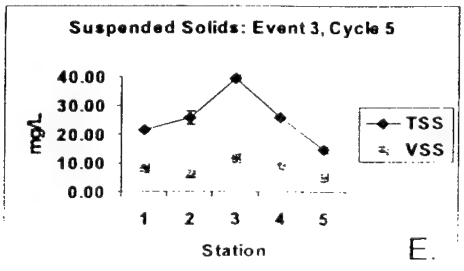


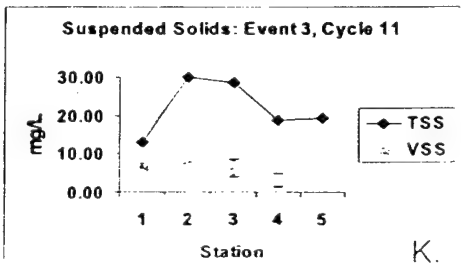


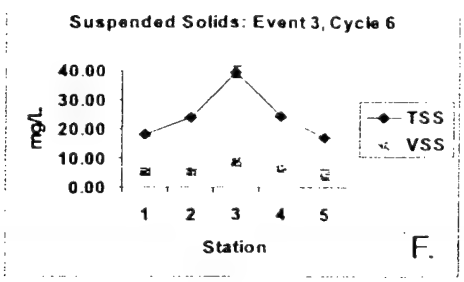












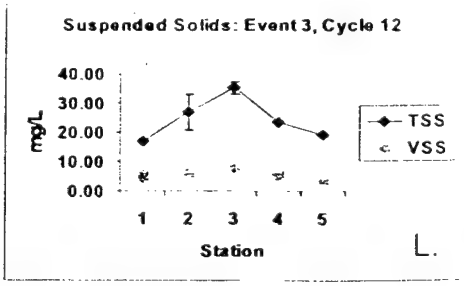
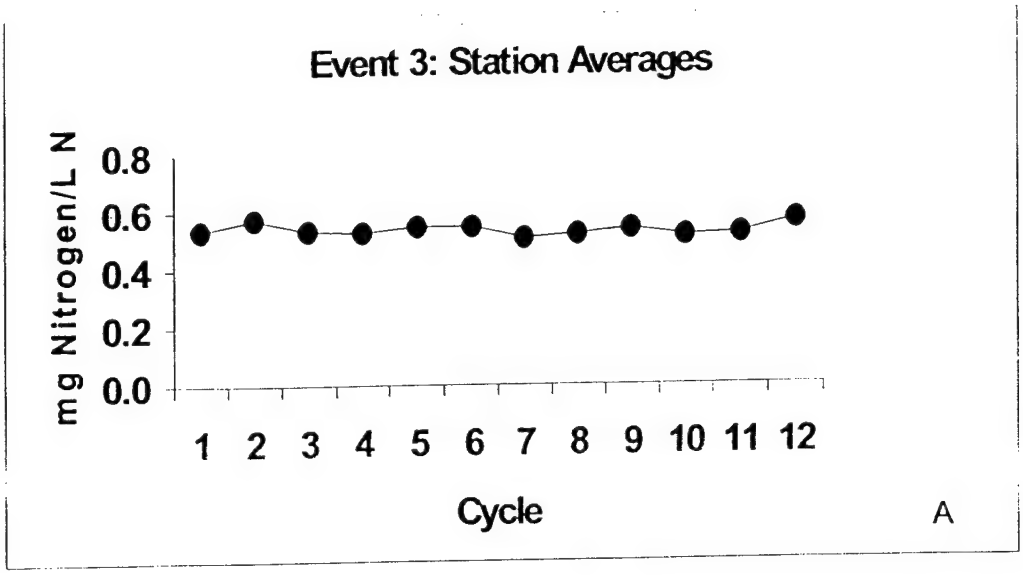


Figure 9: Nitrogen, Event 3



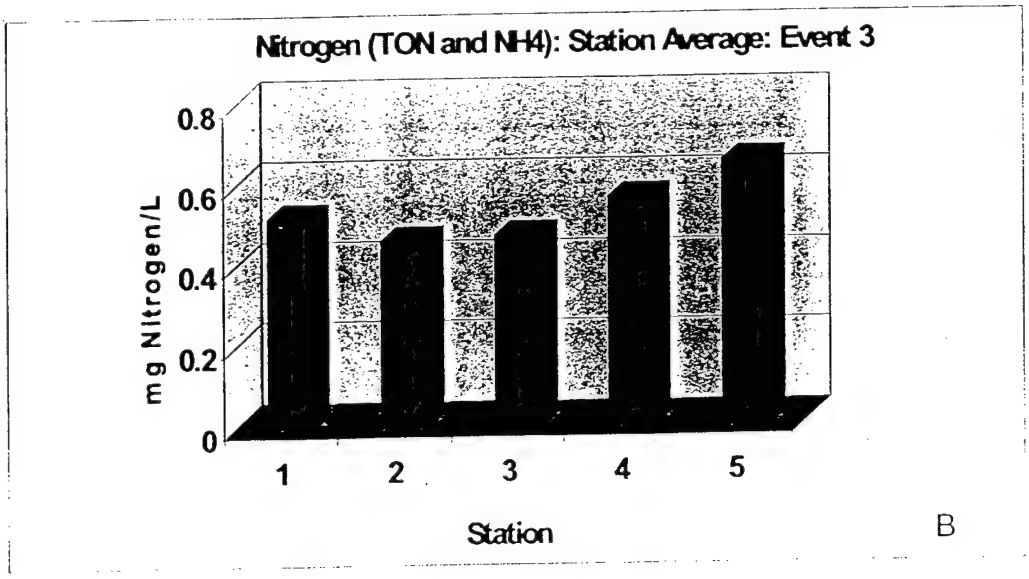
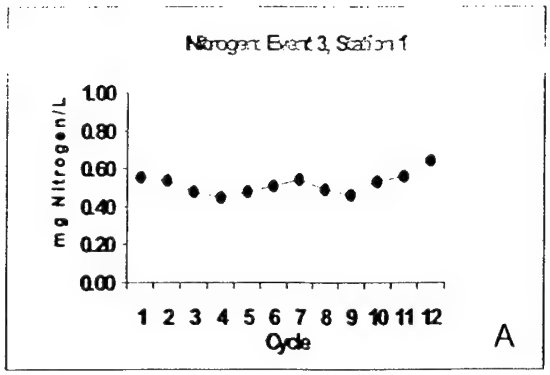
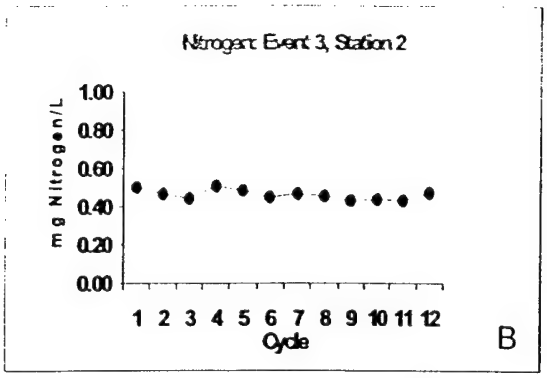
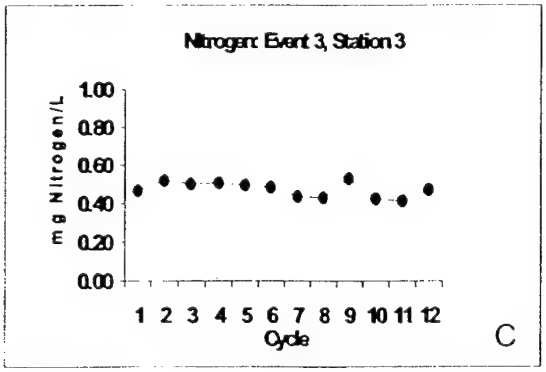
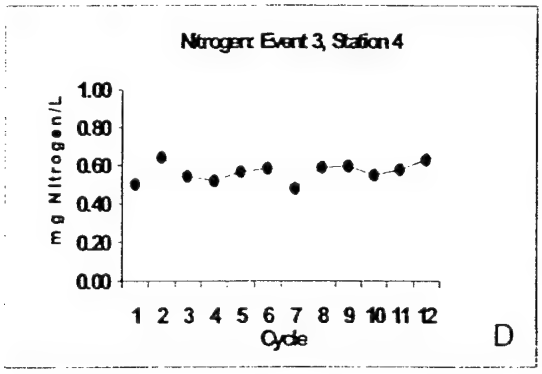


Figure 10: Phosphate, Event 3 Station Summary









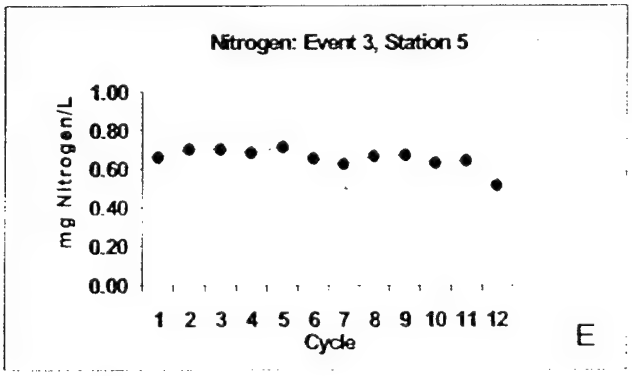
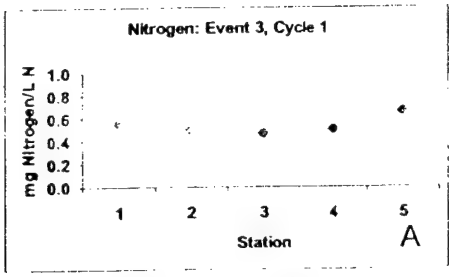
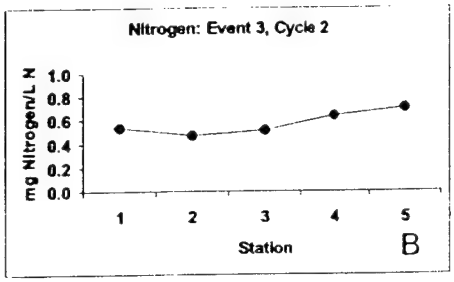
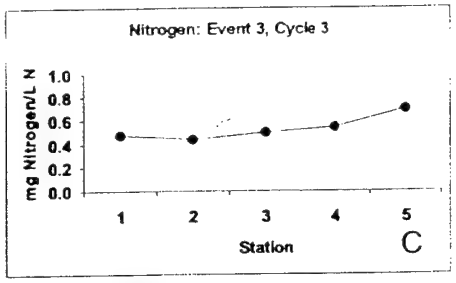
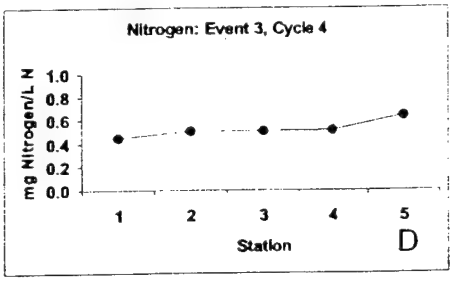


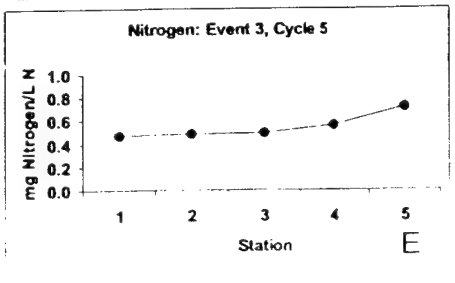
Figure 11: Phosphate, Event 3 Cycle Summary

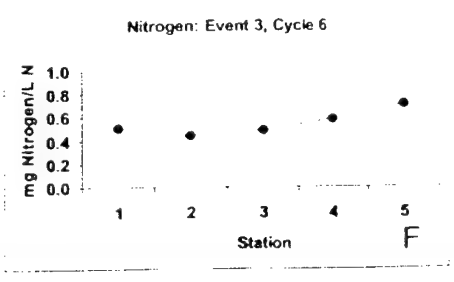


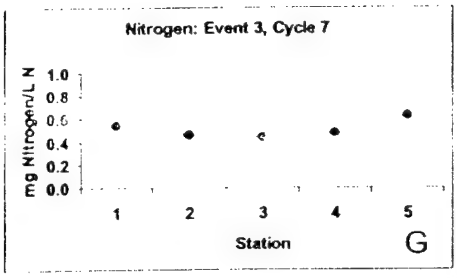


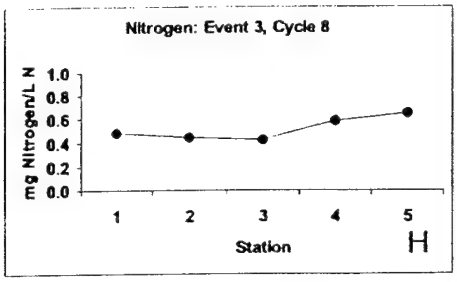


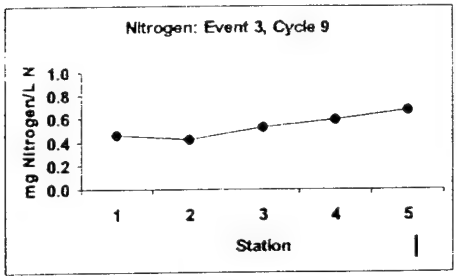


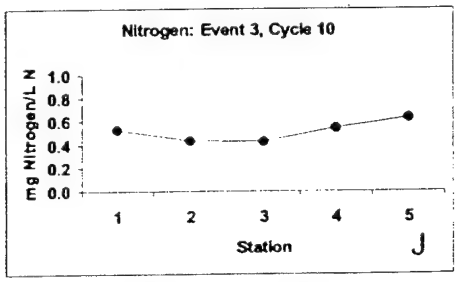


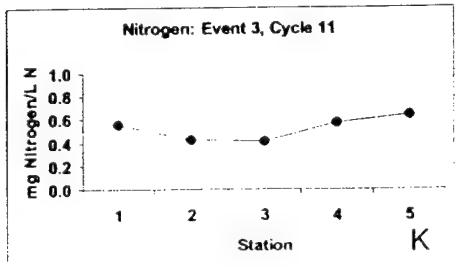












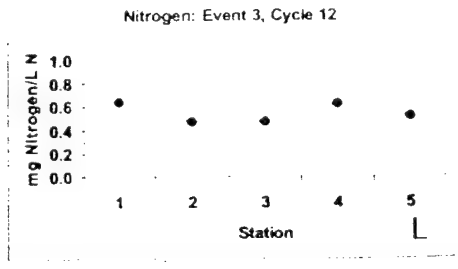
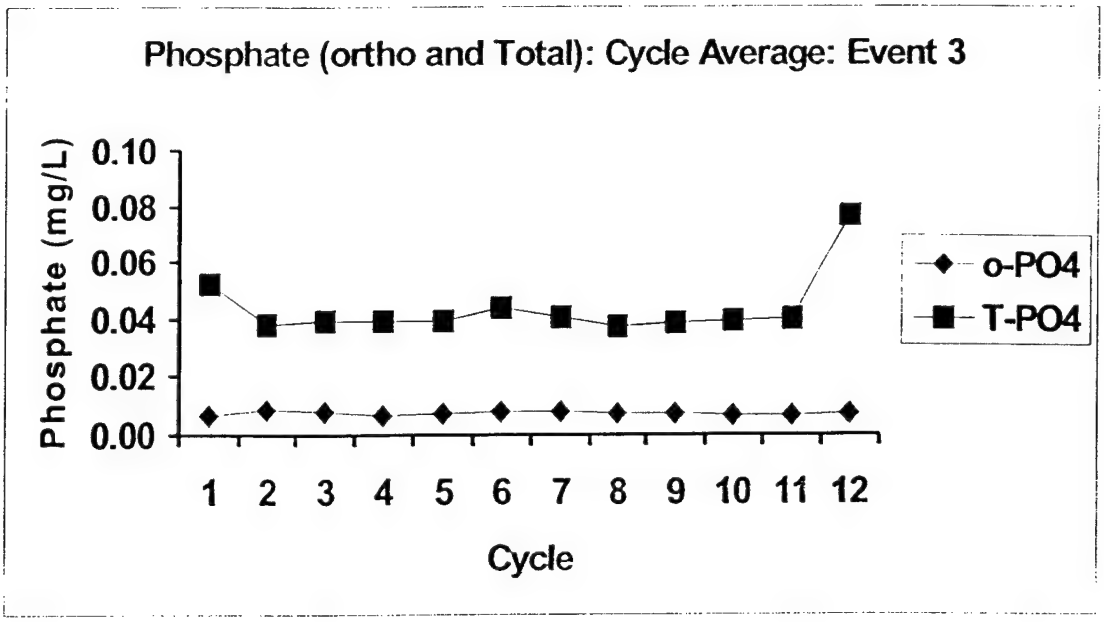


Figure 12: Phosphate, Event 3



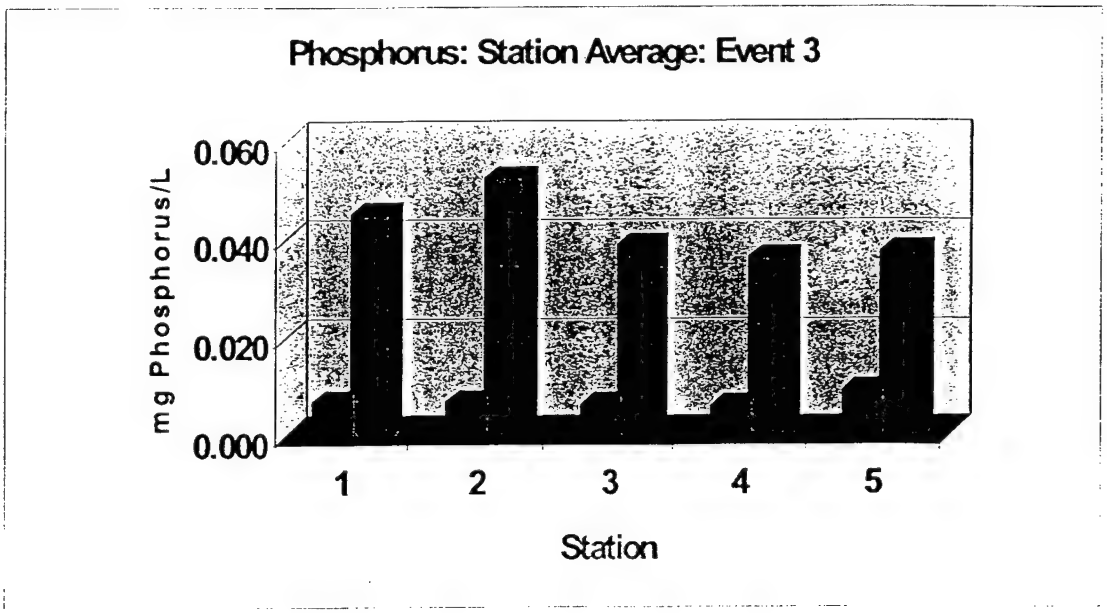
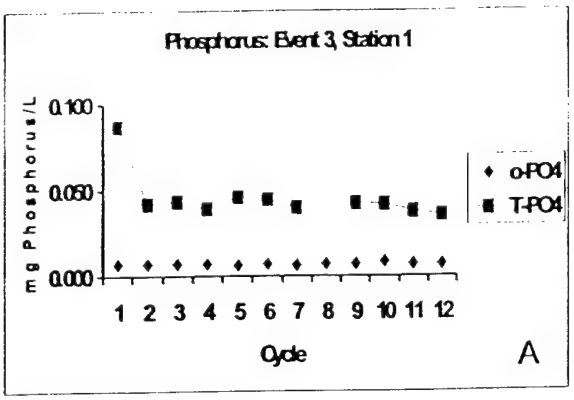
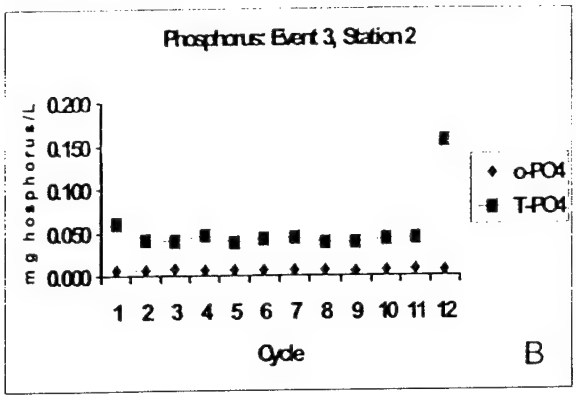
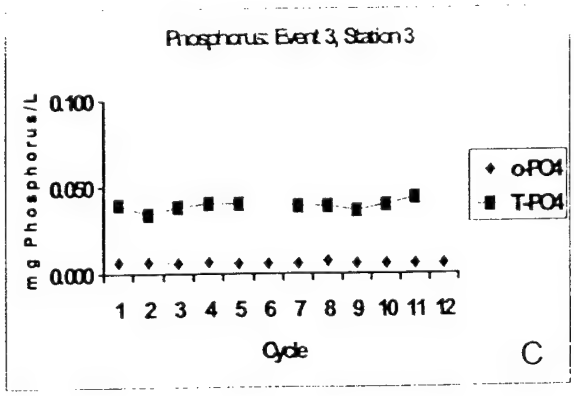
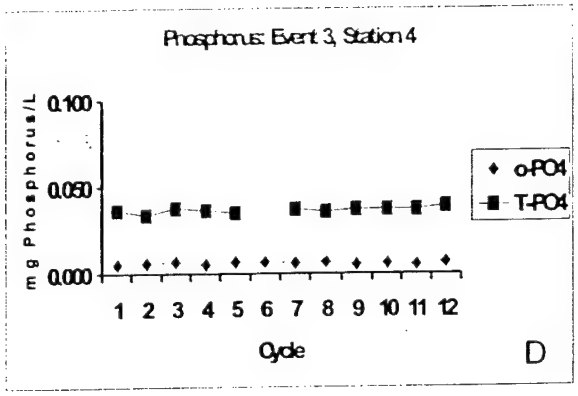


Figure 13: Phosphate, Event 3 Station Summary









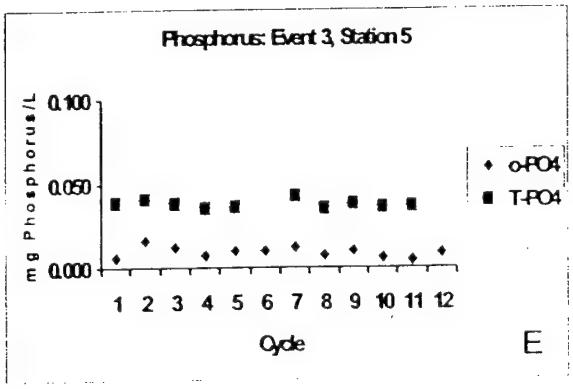


Figure 14: Phosphate, Event 3 Cycle Summary

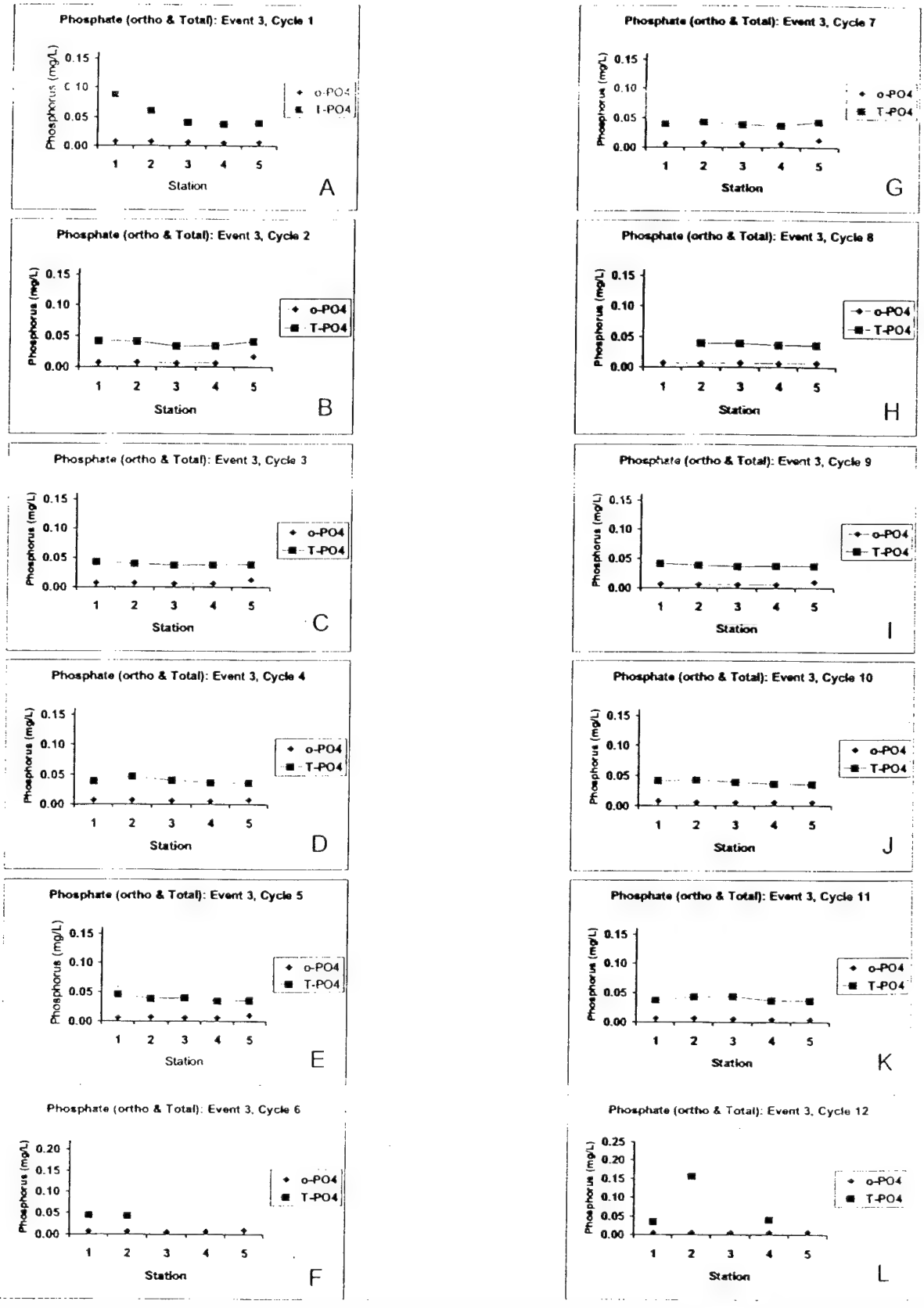
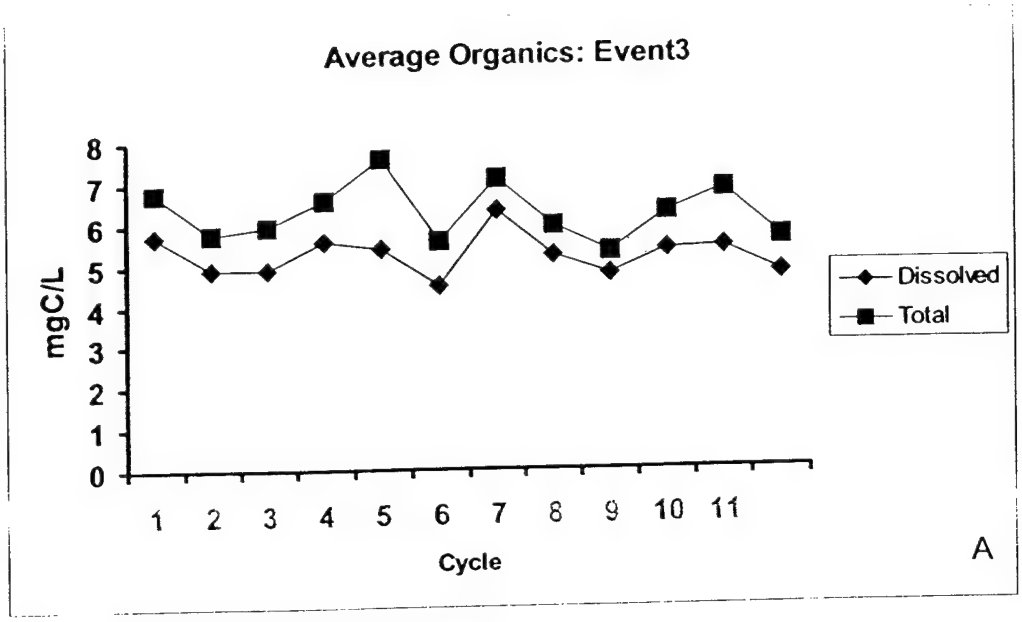


Figure 15: Dissolved and Total Organics Event 3



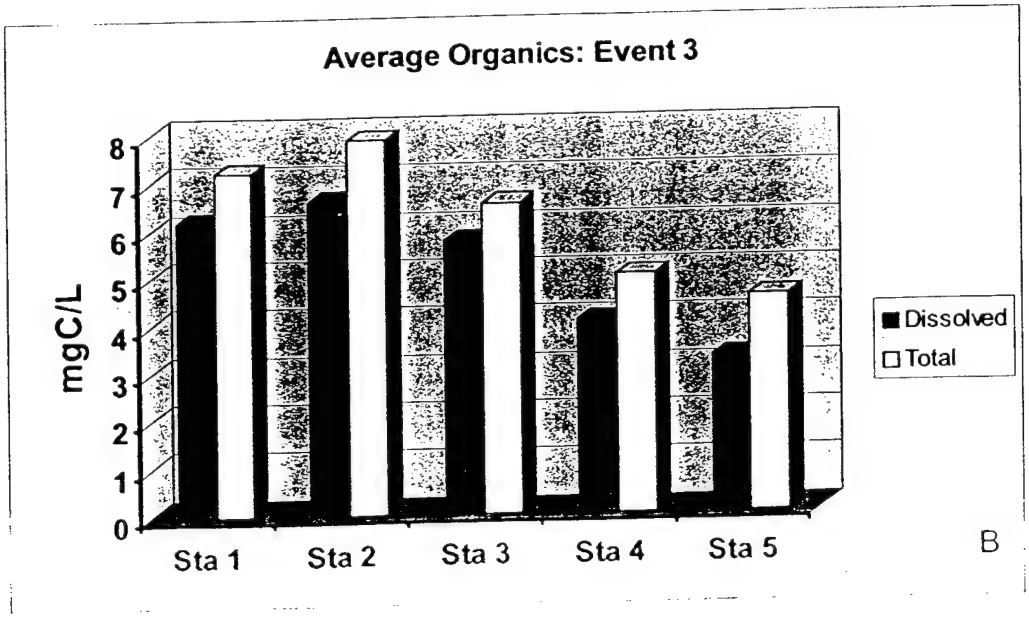
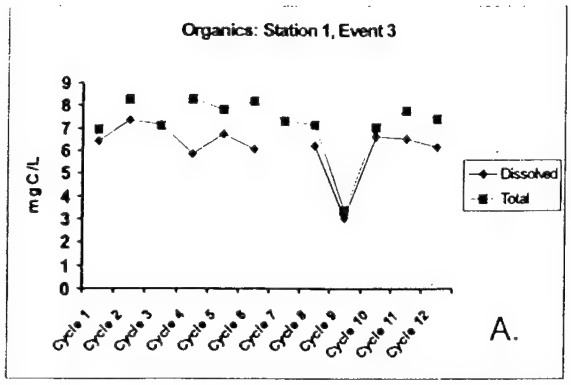
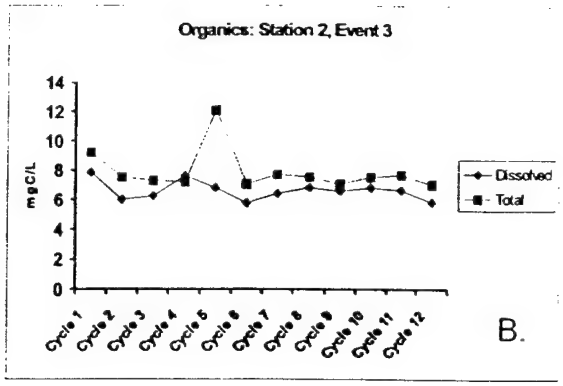
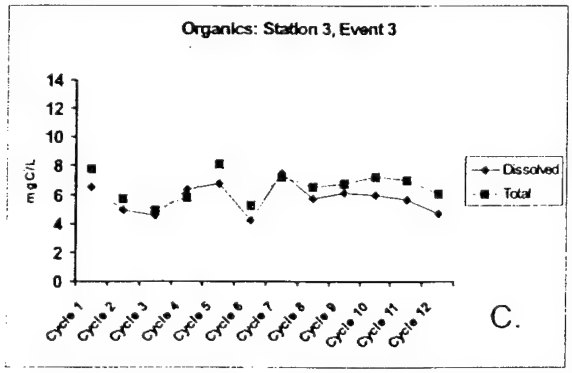
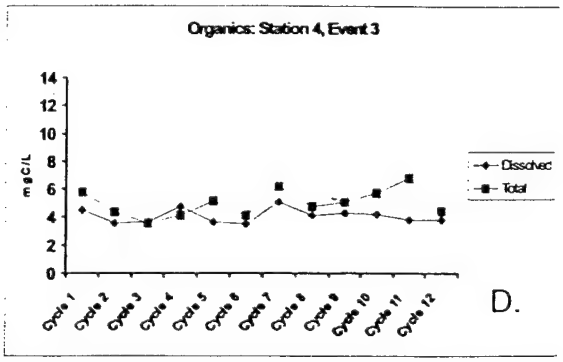


Figure 16: Dissolved and Total Organic Carbon, Event 3, Station Summary









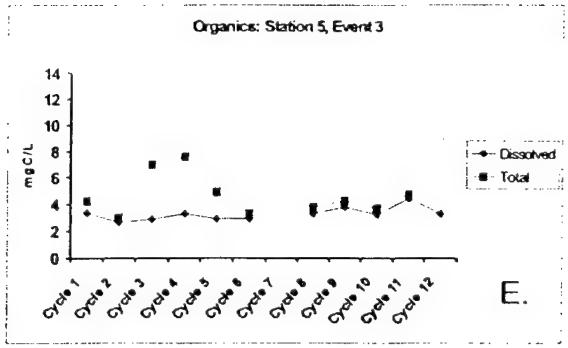
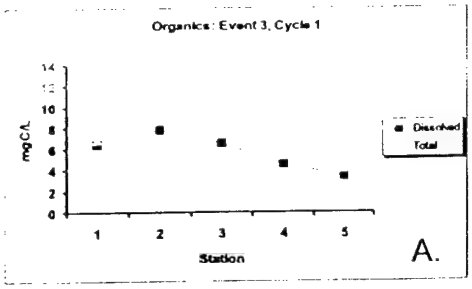
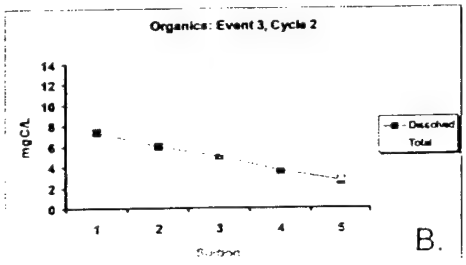
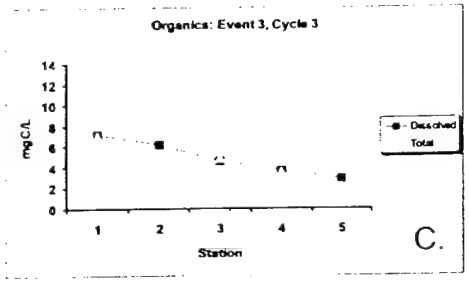
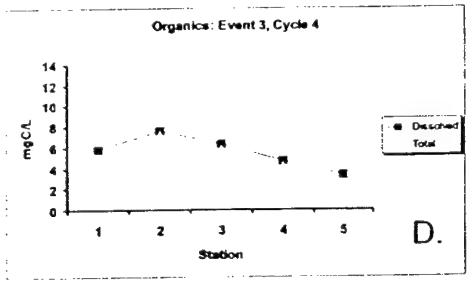


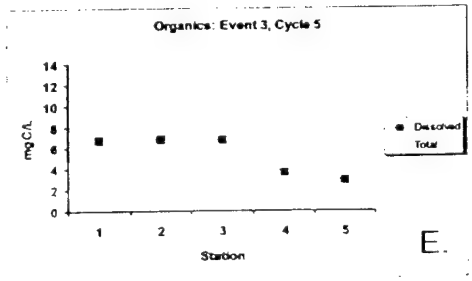
Figure 17: Dissolved and Total Organic Carbon Event 3, Cycle Summary

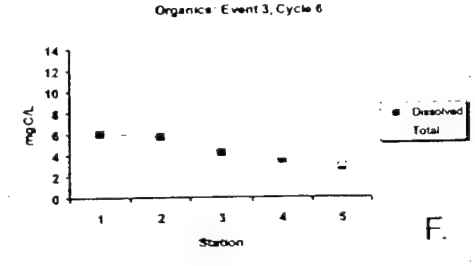


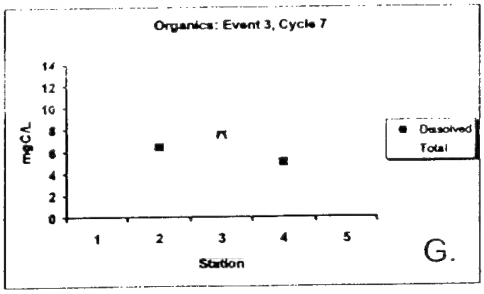


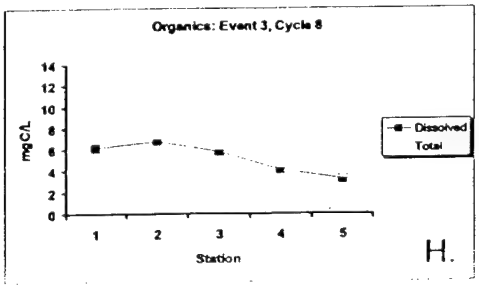


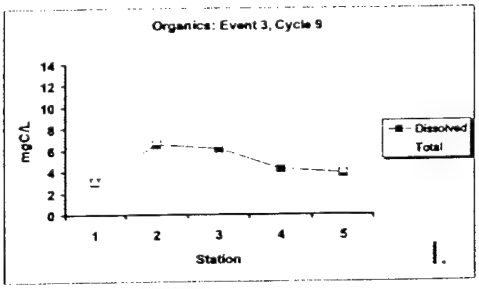


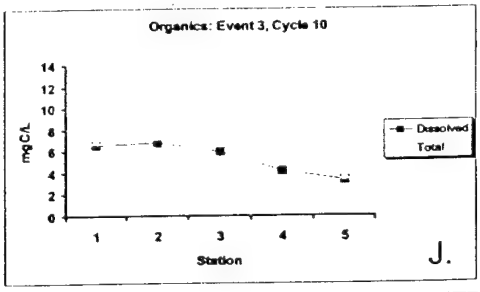


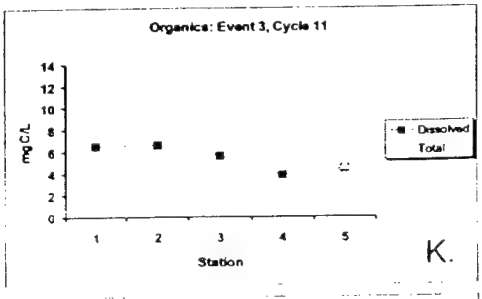












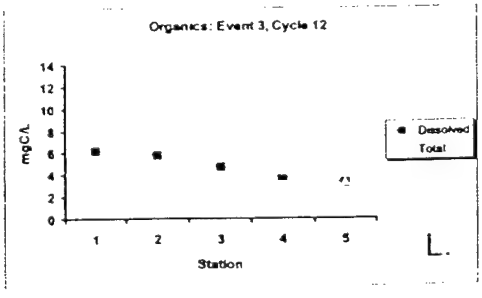
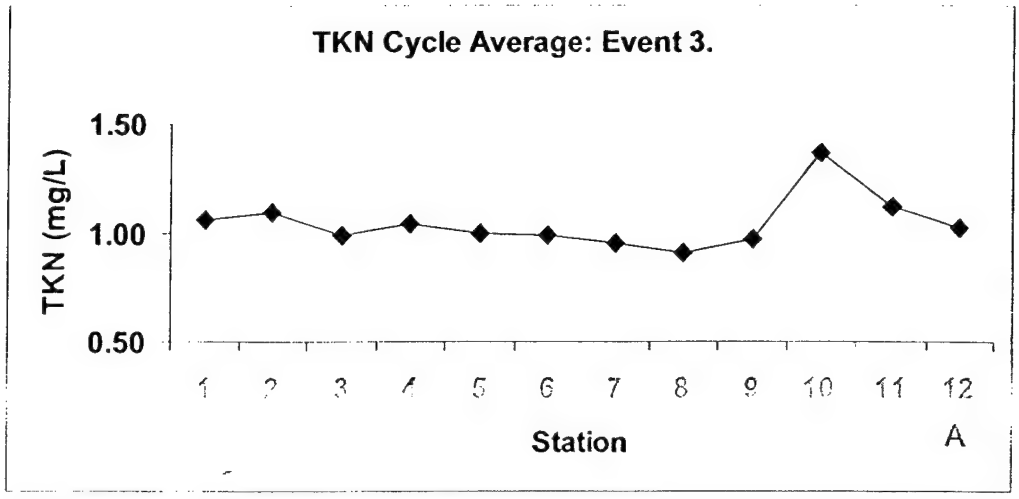


Figure 18: Total Kjeldahl Nitrogen (TKN) Event 3



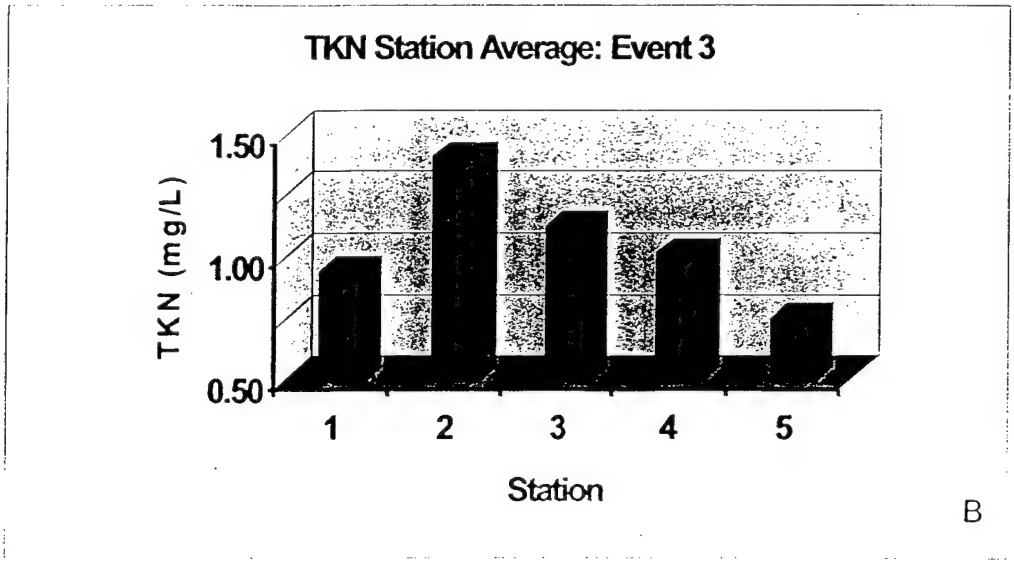
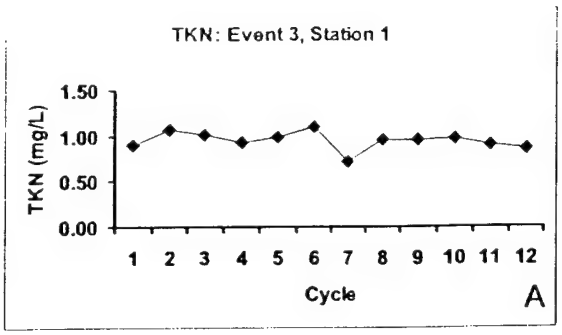
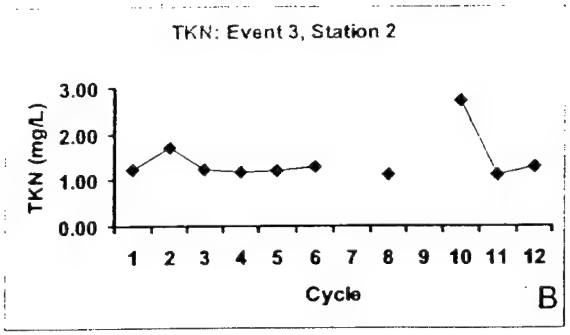
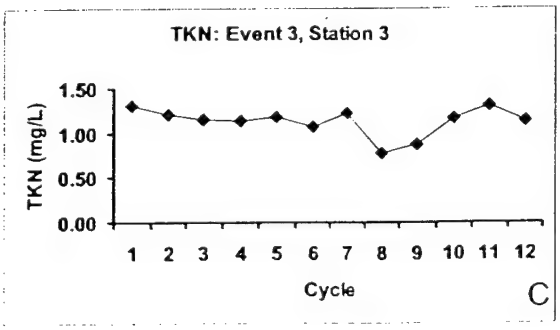
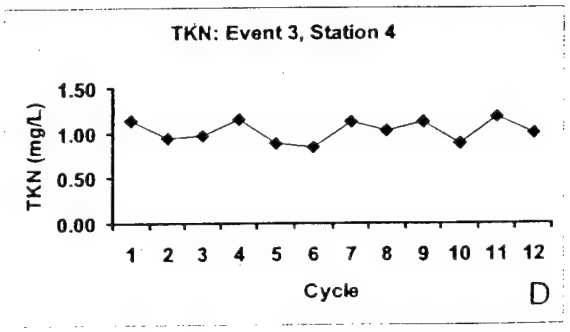


Figure 19: Total Kjeldahl Nitrogen (TKN) Event 3, Station Summary









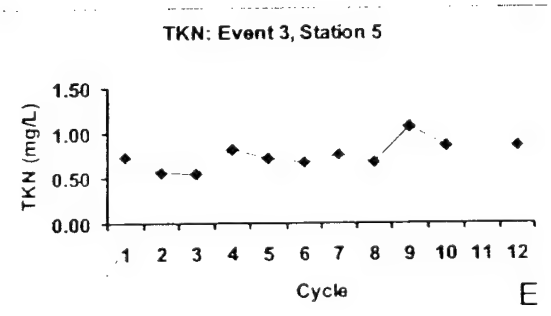
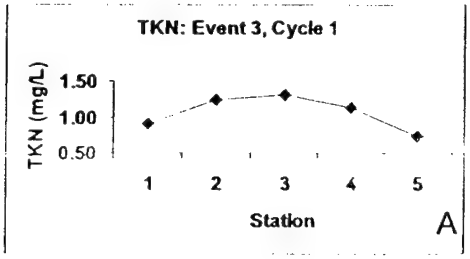
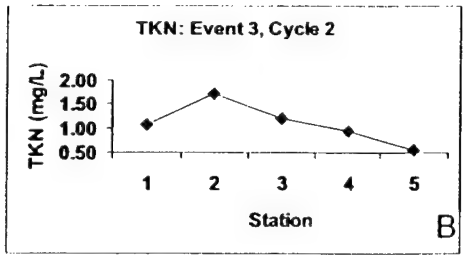
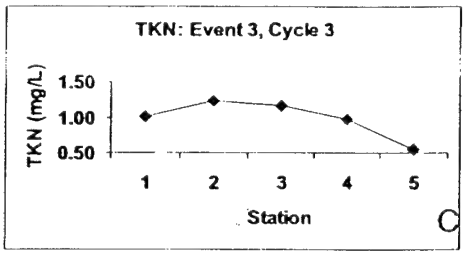
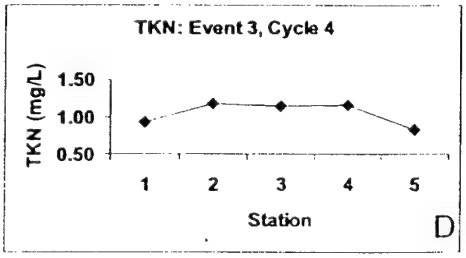


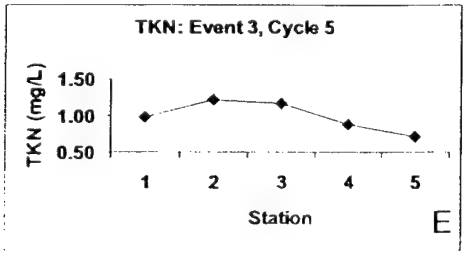
Figure 20: Total Kjeldahl Nitrogen (TKN) Event 3, Cycle Summary

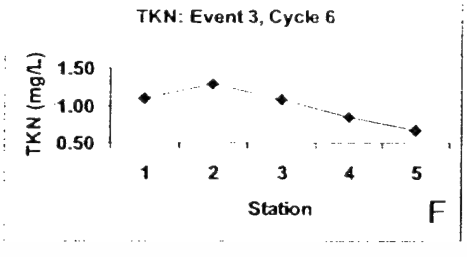


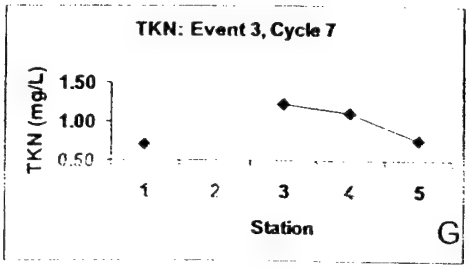


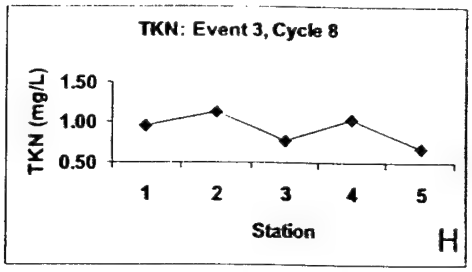


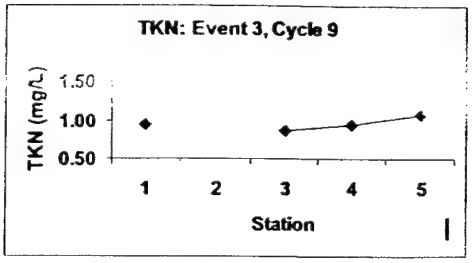


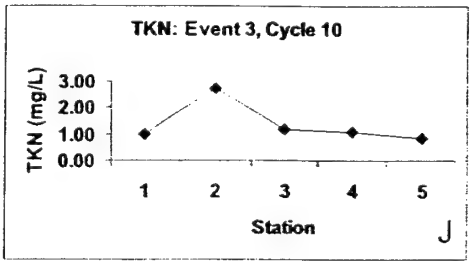


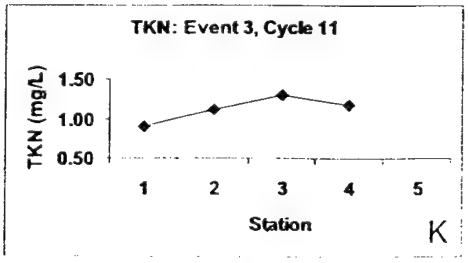












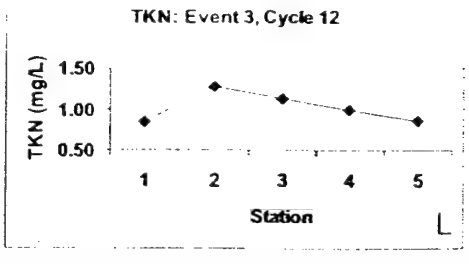
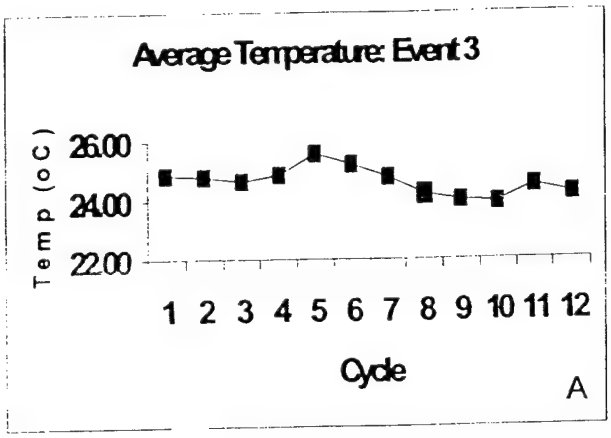
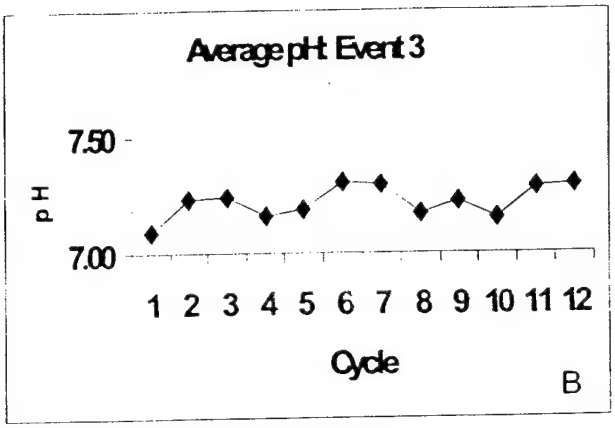
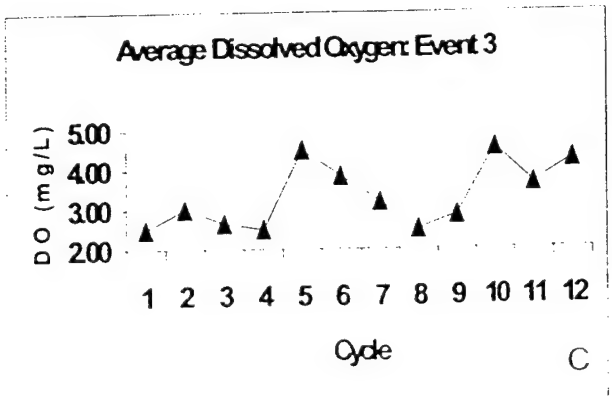


Figure 21: Water Quality, Event 3
Cycle Summary







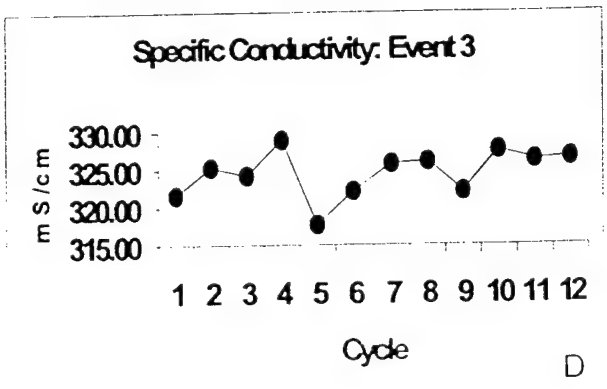
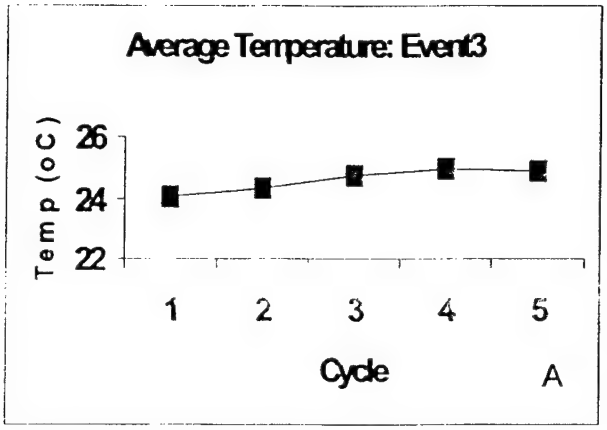
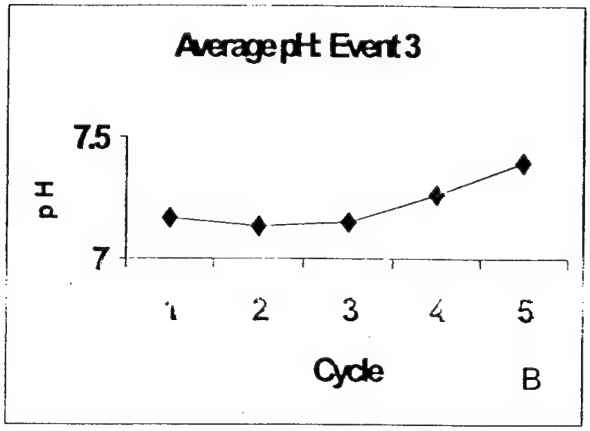
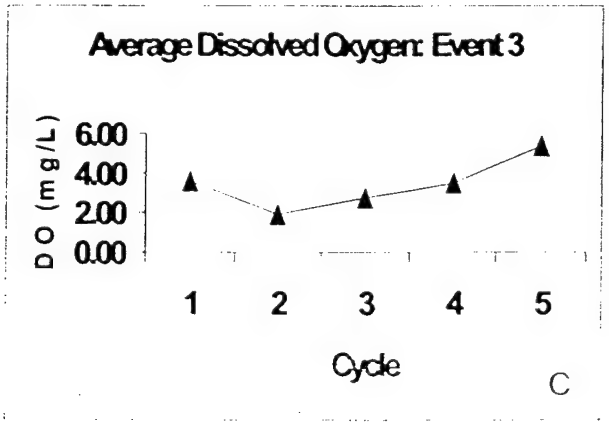
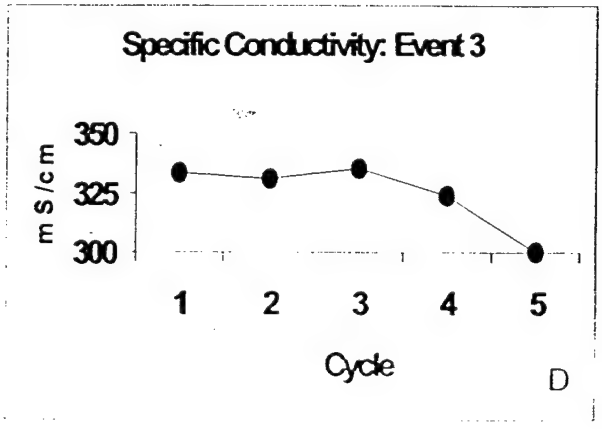


Figure 22: Water quality, Event 3 Station Summary









TABLES

TABLE 1

Summary Data for Biological Oxygen Demand

Event 3: 5/14/2000 23:53 - 5/16/2000 20:40

Cycle	Station	Time Collected	Duplicate	Biological Oxygen Demand						Valid
				DO (t0) $mgO_2\ L^{-1}$	SD	DO (t1) $mgO_2\ L^{-1}$	SD	Inc. Time days	BOD $mgO_2\ L^{-1}$	
1	1	5/14/00 23:53	✓✓	6.01	0.06	0.83	0.04	4.92	5.18	n
1	2	5/15/00 0:08	✓✓	2.30	0.01	0.00	0.00	4.92	2.30	n
1	3	5/15/00 0:19	✓☒	1.62	0.01	0.00		4.92	1.62	n
1	4	5/15/00 0:39	✓✓	2.80	0.02	0.11	0.16	4.92	2.69	n
1	5	5/15/00 0:49	✓✓	6.16	0.02	4.00	0.29	4.92	2.16	y
2	1	5/15/00 3:43	✓✓	3.81	0.09	0.00	0.00	4.96	3.81	n
2	2	5/15/00 3:56	✓✓	1.43	0.08	0.00	0.00	4.96	1.43	n
2	3	5/15/00 4:08	✓✓	2.25	0.16	0.00	0.00	4.96	2.25	n
2	4	5/15/00 4:23	✓✓	4.69	0.04	1.06	0.04	4.96	3.62	y
2	5	5/15/00 4:34	✓✓	6.95	0.05	5.46	0.23	4.96	1.50	y
3	1	5/15/00 7:50	✓☒	3.04	0.07	0.23		5.01	2.81	n
3	2	5/15/00 8:01	✓✓	1.61	0.11	0.00	0.00	5.01	1.61	n
3	3	5/15/00 8:11	✓✓	2.48	0.00	0.00	0.00	5.01	2.48	n
3	4	5/15/00 8:33	✓✓	4.28	0.17	1.44	0.01	5.01	2.84	y
3	5	5/15/00 8:40	✓✓	6.28	0.21	3.69	0.05	5.01	2.59	y
4	1	5/15/00 11:36	✓✓	4.94	0.39	0.11	0.16	5.01	4.83	n
4	2	5/15/00 11:54	✓✓	1.44	0.04	0.00	0.00	5.01	1.44	n
4	3	5/15/00 12:06	✓✓	2.45	0.21	0.00	0.00	5.01	2.45	n
4	4	5/15/00 12:25	☒✓	3.23		0.00	0.00	5.01	3.23	n
4	5	5/15/00 12:33	☒✓	5.76		2.63	0.01	5.01	3.14	y
5	1	5/15/00 15:52	✓✓	6.04	0.11	0.11	0.16	5.01	5.93	n
5	2	5/15/00 16:02	✓✓	1.75	1.91	0.00	0.00	5.01	1.75	n
5	3	5/15/00 16:13	✓✓	4.75	0.11	0.11	0.16	5.01	4.63	n
5	4	5/15/00 16:20	✓✓	5.75	0.28	1.31	0.19	5.01	4.44	y
5	5	5/15/00 16:40	✓✓	8.34	0.08	3.66	0.02	5.01	4.67	y
6	1	5/15/00 19:44	✓✓	3.98	1.64	0.11	0.16	5.03	3.87	n
6	2	5/15/00 19:55	✓✓	2.86	0.05	0.00	0.00	5.03	2.86	n
6	3	5/15/00 20:05	✓✓	3.58	0.02	0.00	0.00	5.03	3.58	n
6	4	5/15/00 20:22	✓✓	5.59	0.44	0.41	0.15	5.03	5.17	n
6	5	5/15/00 20:32	✓✓	7.15	0.02	3.81	0.17	5.03	3.34	y

✓✓ : Duplicate measured for t0 and t1
✓☒ : Duplicate measured for t0 only
☒✓ : Duplicate measured for t1 only
NA : Data not available
Note : Standard deviation calculation based on n=2

TABLE 1

Summary Data for Biological Oxygen Demand

Event 3: 5/14/2000 23:53 - 5/16/2000 20:40

Cycle	Station	Time Collected	Duplicate	Biological Oxygen Demand						Valid
				DO (t0) $mgO_2\ L^{-1}$	SD	DO (t1) $mgO_2\ L^{-1}$	SD	Inc. Time days	BOD $mgO_2\ L^{-1}$	
7	1	5/15/00 23:34	✓✓	5.28	0.17	0.11	0.16	5.00	5.17	n
7	2	5/15/00 23:54	✓✓	2.11	0.14	0.00	0.00	5.00	2.11	n
7	3	5/16/00 0:08	✓✓	2.00	0.06	0.00	0.00	5.00	2.00	n
7	4	5/16/00 0:17	✓✓	2.90	0.23	0.00	0.00	5.00	2.90	n
7	5	5/16/00 0:26	✓✓	6.38	0.30	2.65	0.06	5.00	3.73	y
8	1	5/16/00 3:25	✓✓	4.05	0.06	0.11	0.16	5.01	3.94	n
8	2	5/16/00 3:38	✓✓	1.63	0.01	0.00	0.00	5.01	1.63	n
8	3	5/16/00 3:48	✓✓	2.35	0.02	0.00	0.00	5.01	2.35	n
8	4	5/16/00 3:57	✓✓	3.95	0.05	0.09	0.02	5.01	3.86	n
8	5	5/16/00 4:05	✓✓	5.62	0.05	2.11	0.01	5.01	3.51	y
9	1	5/16/00 7:45	✓✓	2.94	0.09	0.11	0.16	4.99	2.82	n
9	2	5/16/00 8:00	✓✓	1.72	0.07	0.00	0.00	4.99	1.72	n
9	3	5/16/00 8:10	✓✓	3.47	0.09	0.15	0.21	4.99	3.32	n
9	4	5/16/00 8:29	✓✓	4.65	0.01	1.77	0.07	4.99	2.88	y
9	5	5/16/00 8:36	✓✓	5.58	0.05	1.33	1.88	4.99	4.25	y
10	1	5/16/00 11:30	✓✓	4.10	0.06	0.00	0.00	4.98	4.10	n
10	2	5/16/00 11:38	✓✓	2.48	0.17	0.00	0.00	4.98	2.48	n
10	3	5/16/00 11:51	✓✓	2.38	0.01	0.00	0.00	4.98	2.38	n
10	4	5/16/00 12:13	✓✓	4.18	0.01	0.38	0.22	4.98	3.80	n
10	5	5/16/00 12:25	✓✓	6.22	0.04	3.29	0.19	4.98	2.93	y
11	1	5/16/00 15:26	✓✓	8.05	0.08	1.79	0.18	5.03	6.26	y
11	2	5/16/00 15:40	✓✓	3.64	0.16	0.64	0.91	5.03	3.00	n
11	3	5/16/00 15:50	✓✓	3.44	0.10	0.60	0.53	5.03	2.84	n
11	4	5/16/00 16:10	✓✓	4.11	1.02	1.53	0.59	5.03	2.58	n
11	5	5/16/00 16:20	✓✓	8.95	0.22	6.53	1.27	5.03	2.42	y
12	1	5/16/00 19:45	✓✓	4.83	0.19	0.54	0.44	5.04	4.29	n
12	2	5/16/00 19:55	✓☒	2.86	0.04	0.23		5.04	2.64	n
12	3	5/16/00 20:05	✓✓	4.32	0.07	0.87	0.12	5.04	3.44	n
12	4	5/16/00 20:25	✓☒	6.06	0.11	2.37		5.04	3.70	y
12	5	5/16/00 20:40	✓✓	5.94	0.08	3.82	1.10	5.04	2.13	y

✓✓ : Duplicate measured for t0 and t1
✓☒ : Duplicate measured for t0 only
☒✓ : Duplicate measured for t1 only
Note : Standard deviation calculation based on n=2

TABLE 2

Summary Data for Suspended Solids

Event 3: 5/14/2000 23:53 - 5/16/2000 20:40

Cycle	Station	Time Collected	Suspended Solids					
			Ave. TSS mg/L	TSS Sta. Dev.	Duplicate	Ave. VSS mg/L	VSS Sta. Dev.	Duplicate
1	1	5/14/00 23:53	23.28	1.9420	✓	7.55	2.79	✓
1	2	5/15/00 0:08	16.94	0.8186	✓	5.52	0.55	✓
1	3	5/15/00 0:19	22.22/21.48	0.5217	✓	5.80/7.03	0.87	✓
1	4	5/15/00 0:39	26.12	0.3074	✓	6.75	1.49	✓
1	5	5/15/00 0:49	17.60	1.5430	✓	3.53	2.35	✓
2	1	5/15/00 3:43	29.17	2.2115	✓	6.02	1.15	✓
2	2	5/15/00 3:56	23.84	3.8640	✓	6.12	2.96	✓
2	3	5/15/00 4:08	26.56	1.0150	✓	6.76	0.08	✓
2	4	5/15/00 4:23	20.25	0.9948	✓	5.60	0.84	✓
2	5	5/15/00 4:34	10.35	1.2310	✓	4.10	1.78	✓
3	1	5/15/00 7:50	18.06	0.8115	✓	5.64	0.27	✓
3	2	5/15/00 8:01	13.86	0.4886	✓	4.72	0.56	✓
3	3	5/15/00 8:11	23.58	0.4572	✓	5.98	1.89	✓
3	4	5/15/00 8:34	46.10	1.2151	✓	28.77	31.26	✓
3	5	5/15/00 8:40	15.51	2.1081	✓	4.64	1.93	✓
4	1	5/15/00 11:36	20.72	0.1644	✓	6.77	0.14	✓
4	2	5/15/00 11:54	15.36	1.4358	✓	5.64	1.40	✓
4	3	5/15/00 12:06	15.63/16.33	0.4961	✓	7.14/5.31	1.30	✓
4	4	5/15/00 12:25	19.11	0.6331	✓	7.14	0.05	✓
4	5	5/15/00 12:33	21.12	3.0111	✓	5.59	0.46	✓
5	1	5/15/00 15:52	21.59	0.8240	✓	8.13	0.51	✓
5	2	5/15/00 16:02	25.74	2.2362	✓	6.31	0.64	✓
5	3	5/15/00 16:12	39.25	1.0607	✓	11.64	1.61	✓
5	4	5/15/00 16:28	25.69	0.4379	✓	8.82	0.45	✓
5	5	5/15/00 16:40	14.48	1.1220	✓	5.08	0.48	✓
6	1	5/15/00 19:43	18.18	0.7997	✓	5.27	1.39	✓
6	2	5/15/00 19:55	23.97	0.6678	✓	5.47	1.45	✓
6	3	5/15/00 20:05	39.37	2.0402	✓	8.52	0.50	✓
6	4	5/15/00 20:22	24.41			6.57	0.00	✓
6	5	5/15/00 20:32	16.99	0.2299	✓	3.93	2.06	✓

Duplicate: ✓

TABLE 2

Summary Data for Suspended Solids

Event 2: 4/17/2000 7:47 - 4/19/2000 4:06

Cycle	Station	Time Collected	Suspended Solids					
			Ave. TSS mg/L	TSS Sta. Dev.	Duplicate	Ave. VSS mg/L	VSS Sta. Dev.	Duplicate
7	1	5/15/00 23:34	28.73	6.29	✓	13.56	0.37	✓
7	2	5/15/00 23:54	34.24	2.58	✓	13.42	3.44	✓
7	3	5/16/00 0:08	21.48	8.83	✓	5.76	0.96	✓
7	4	5/16/00 0:17	32.31/33.01	0.49	✓	9.23/9.35	0.09	✓
7	5	5/16/00 0:27	25.79	0.75	✓	9.11	0.97	✓
8	1	5/16/00 3:25	18.83	0.77	✓	6.89	0.86	✓
8	2	5/16/00 3:38	18.87	0.76	✓	5.23	4.25	✓
8	3	5/16/00 3:48	23.26	0.89	✓	4.91	2.48	✓
8	4	5/16/00 3:51	34.94	0.89	✓	7.05	0.96	✓
8	5	5/16/00 4:05	21.10	2.67	✓	4.85	1.27	✓
9	1	5/16/00 7:45	16.87	0.60	✓	2.14	0.74	✓
9	2	5/16/00 8:00	17.79	1.59	✓	6.88	0.97	✓
9	3	5/16/00 8:10	25.28	1.95	✓	4.56	2.31	✓
9	4	5/16/00 8:29	26.85	2.81	✓	4.92	1.60	✓
9	5	5/16/00 8:36	29.08	4.13	✓	6.38	5.48	✓
10	1	5/16/00 11:30	13.34	0.26	✓	4.20	0.72	✓
10	2	5/16/00 11:38	18.07	0.03	✓	4.81	1.28	✓
10	3	5/16/00 11:51	20.45	0.00	✓	5.91	1.29	✓
10	4	5/16/00 12:13	25.71/25.33	0.27	✓	6.67/5.33	0.94	✓
10	5	5/16/00 12:25	19.09	6.80	✓	5.53	1.61	✓
11	1	5/16/00 15:26	12.85	0.34	✓	6.75	0.29	✓
11	2	5/16/00 15:40	29.87	1.22	✓	7.41	0.83	✓
11	3	5/16/00 15:50	28.46	0.06	✓	6.37	2.31	✓
11	4	5/16/00 16:10	18.82	0.41	✓	3.20	1.76	✓
11	5	5/16/00 16:20	19.26	0.37	✓	5.36	0.51	✓
12	1	5/16/00 19:45	17.04	0.65	✓	4.96	2.18	✓
12	2	5/16/00 19:55	26.99	6.07	✓	6.31	0.51	✓
12	3	5/16/00 20:05	35.20	1.96	✓	7.71	0.13	✓
12	4	5/16/00 20:25	23.63	0.53	✓	5.54	0.06	✓
12	5	5/16/00 20:40	19.06	0.65	✓	4.00	0.27	✓

Duplicate: ✓

TABLE 3

Summary Data for Nutrients

Event 3: 5/14/2000 23:53 - 5/16/2000 20:40

Cycle	Station	Time Collected	Duplicate	Nutrients		
				TON mg/L	$O\text{-}PO_4^{2-}$ mg/L	ΣPO_4^{2-} mg/L
1	1	4/17/00 7:47		0.5539	0.0070	0.0871
1	2	4/17/00 8:09		0.4996	0.0071	0.0602
1	3	4/17/00 8:19		0.4635	0.0068	0.0395
1	4	4/17/00 8:34		0.5003	0.0055	0.0364
1	5	4/17/00 8:43		0.6589	0.0060	0.0387
2	1	4/17/00 11:31		0.5339	0.0072	0.0417
2	2	4/17/00 11:44		0.4673	0.0071	0.0410
2	3	4/17/00 11:54		0.5164	0.0068	0.0340
2	4	4/17/00 12:08		0.6394	0.0059	0.0335
2	5	4/17/00 12:17		0.7187	0.0166	0.0417
2	5	4/17/00 12:17	✓	0.6966	0.0162	0.0398
3	1	4/17/00 15:19		0.4770	0.0073	0.0431
3	2	4/17/00 15:30		0.4437	0.0075	0.0396
3	3	4/17/00 15:42		0.4991	0.0062	0.0381
3	4	4/17/00 15:56		0.5410	0.0067	0.0376
3	5	4/17/00 16:05		0.6994	0.0124	0.0384
4	1	4/17/00 19:40		0.4465	0.0070	0.0386
4	2	4/17/00 19:55		0.5067	0.0074	0.0462
4	3	4/17/00 20:05		0.5058	0.0068	0.0404
4	4	4/17/00 20:20		0.5154	0.0057	0.0362
4	5	4/17/00 20:30		0.6376	0.0073	0.0353
4	5	4/17/00 20:30	✓	0.6488	0.0074	0.0356
5	1	4/17/00 23:20		0.4742	0.0063	0.0462
5	2	4/17/00 23:45		0.4825	0.0071	0.0389
5	3	4/18/00 0:00		0.4941	0.0061	0.0402
5	4	4/18/00 0:10		0.5624	0.0066	0.0350
5	5	4/18/00 0:20		0.7115	0.0105	0.0359
6	1	4/18/00 3:15		0.5081	0.0070	0.0443
6	2	4/18/00 3:30		0.4444	0.0074	0.0428
6	3	4/18/00 3:42		0.4850	0.0064	
6	4	4/18/00 3:50		0.5822	0.0068	
6	5	4/18/00 4:00		0.7273	0.0108	
6	5	4/18/00 4:00	✓	0.6774	0.0098	

Duplicate: ✓

TON: Total oxiditable nitrogen (NO_2^{2-} and NO_3^-)

TABLE 3

Summary Data for Nutrients

Event 3: 5/14/2000 23:53 - 5/16/2000 20:40

Cycle	Station	Time Collected	Duplicate	Nutrients		
				TON mg/L	$O\text{-}PO_4^{2-}$ mg/L	ΣPO_4^{2-} mg/L
7	1	4/18/00 7:15		0.5434	0.0064	0.0398
7	2	4/18/00 7:30		0.4631	0.0075	0.0433
7	3	4/18/00 7:45		0.4376	0.0065	0.0391
7	4	4/18/00 8:00		0.4787	0.0064	0.0369
7	5	4/18/00 8:10		0.6254	0.0124	0.0431
8	1	4/18/00 11:15		0.4858	0.0069	
8	2	4/18/00 11:35		0.4520	0.0067	0.0390
8	3	4/18/00 11:50		0.4274	0.0074	0.0390
8	4	4/18/00 12:10		0.5910	0.0068	0.0359
8	5	4/18/00 12:20		0.6548	0.0076	0.0354
8	5	4/18/00 12:20	✓	0.6525	0.0076	0.0353
9	1	4/18/00 15:20		0.4601	0.0069	0.0423
9	2	4/18/00 15:25		0.4278	0.0059	0.0387
9	3	4/18/00 15:35		0.5304	0.0064	0.0364
9	4	4/18/00 15:55		0.5938	0.0058	0.0372
9	5	4/18/00 16:05		0.6731	0.0100	0.0379
10	1	4/18/00 19:30		0.5277	0.0080	0.0420
10	2	4/18/00 19:50		0.4366	0.0067	0.0426
10	3	4/18/00 19:55		0.4228	0.0060	0.0398
10	4	4/18/00 20:03		0.5467	0.0058	0.0371
10	5	4/18/00 20:03		0.6495	0.0057	0.0358
10	5	4/18/00 20:03		0.6171	0.0061	0.0360
11	1	4/18/00 23:23		0.5574	0.0072	0.0378
11	2	4/18/00 23:40		0.4285	0.0076	0.0432
11	3	4/18/00 23:51		0.4094	0.0061	0.0435
11	4	4/18/00 23:59		0.5751	0.0053	0.0369
11	5	4/19/00 0:08		0.6401	0.0050	0.0367
12	1	4/19/00 3:32		0.6493	0.0073	0.0352
12	2	4/19/00 3:36		0.4685	0.0062	0.1557
12	3	4/19/00 3:47		0.4721	0.0061	
12	4	4/19/00 3:57		0.6452	0.0084	0.0391
12	4	4/19/00 3:57		0.5981	0.0055	
12	5	4/19/00 4:06		0.5138	0.0089	

Duplicate: ✓

TABLE 4

Summary Data for Dissolved Organic Carbon

Event 3: 5/14/2000 23:53 - 5/16/2000 20:40

Cycle	Station	Time Collected	Duplicate	Dissolved Organic Carbon mgC/L	SD
1	1	5/14/00 23:53	✓	6.41/6.29	0.18
1	2	5/15/00 0:08		7.80	
1	3	5/15/00 0:19		6.49	
1	4	5/15/00 0:39		4.52	
1	5	5/15/00 0:49		3.35	
2	1	5/15/00 3:43		7.36	
2	2	5/15/00 3:56		6.01	
2	3	5/15/00 4:08		4.96	
2	4	5/15/00 4:23		3.58	
2	5	5/15/00 4:34		2.65	
3	1	5/15/00 7:50	✓	7.14/7.11	0.05
3	2	5/15/00 8:01		6.21	
3	3	5/15/00 8:11		4.54	
3	4	5/15/00 8:34		3.63	
3	5	5/15/00 8:40		2.86	
4	1	5/15/00 11:36		5.84	
4	2	5/15/00 11:54		7.59	
4	3	5/15/00 12:06		6.35	
4	4	5/15/00 12:25		4.71	
4	5	5/15/00 12:33		3.33	
5	1	5/15/00 15:52	✓	6.73/6.44	0.41
5	2	5/15/00 16:02		6.84	
5	3	5/15/00 16:12		6.75	
5	4	5/15/00 16:28		3.62	
5	5	5/15/00 16:30		2.92	
6	1	5/15/00 19:43	✓	6.07/6.16	0.12
6	2	5/15/00 19:55		5.76	
6	3	5/15/00 20:05		4.23	
6	4	5/15/00 20:22		3.48	
6	5	5/15/00 20:32		2.88	

✓ : Duplicate measured

NA: Data not available

TABLE 4

Summary Data for Dissolved Organic Carbon

Event 3: 5/14/2000 23:53 - 5/16/2000 20:40

Cycle	Station	Time Collected	Duplicate	Dissolved Organic Carbon mgC/L	SD
7	1	5/15/00 23:34			
7	2	5/15/00 23:54		6.43	
7	3	5/16/00 0:08		7.49	
7	4	5/16/00 0:17		5.03	
7	5				
8	1	5/16/00 3:25		6.21	
8	2	5/16/00 3:38		6.83	
8	3	5/16/00 3:48		5.75	
8	4	5/16/00 3:50		4.09	
8	5	5/16/00 4:05		3.27	
9	1	5/16/00 7:45		3.04	
9	2	5/16/00 8:00		6.53	
9	3	5/16/00 8:10		6.11	
9	4	5/16/00 8:29		4.29	
9	5	5/16/00 8:36		3.82	
10	1	5/16/00 11:30	✓	6.59/6.31	0.40
10	2	5/16/00 11:38		6.79	
10	3	5/16/00 11:51		5.96	
10	4	5/16/00 12:13		4.18	
10	5	5/16/00 12:25		3.25	
11	1	5/16/00 15:26	✓	6.51/6.54	0.04
11	2	5/16/00 15:50		6.64	
11	3	5/16/00 15:55		5.63	
11	4	5/16/00 16:10		3.81	
11	5	5/16/00 16:20		4.42	
12	1	5/16/00 19:45		6.17	
12	2	5/16/00 19:55		5.83	
12	3	5/16/00 20:05		4.71	
12	4	5/16/00 20:25		3.82	
12	5	5/16/00 20:40		3.28	

✓ : Duplicate measured
NA: Data not available

TABLE 5

Summary Data for Total Organic Carbon

Event 3: 5/14/2000 23:53 - 5/16/2000 20:40

Cycle	Station	Time Collected	Duplicate	Total Organic Carbon mgC/L	SD
1	1	5/14/00 23:53	✓	6.93	0.29
1	2	5/15/00 0:08		9.22	
1	3	5/15/00 0:19		7.76	
1	4	5/15/00 0:39		5.79	
1	5	5/15/00 0:49		4.23	
2	1	5/15/00 3:43		8.29	
2	2	5/15/00 3:56		7.56	
2	3	5/15/00 4:08		5.70	
2	4	5/15/00 4:23		4.35	
2	5	5/15/00 4:34		2.97	
3	1	5/15/00 7:50	✓	7.07/7.16	0.13
3	2	5/15/00 8:01		7.25	
3	3	5/15/00 8:11		4.91	
3	4	5/15/00 8:34		3.59	
3	5	5/15/00 8:40		6.99	
4	1	5/15/00 11:36		8.30	
4	2	5/15/00 11:54		7.17	
4	3	5/15/00 12:06		5.78	
4	4	5/15/00 12:25		4.09	
4	5	5/15/00 12:33		7.53	
5	1	5/15/00 15:52	✓	7.80/7.64	0.22
5	2	5/15/00 16:02		12.05	
5	3	5/15/00 16:12		8.08	
5	4	5/15/00 16:28		5.13	
5	5	5/15/00 16:30		4.93	
6	1	5/15/00 19:43	✓	8.15/7.71	0.62
6	2	5/15/00 19:55		7.03	
6	3	5/15/00 20:05		5.27	
6	4	5/15/00 20:22		4.11	
6	5	5/15/00 20:32	✓	3.27/3.27	0.00

✓ : Duplicate measured

NA: Data not available

TABLE 5

Summary Data for Total Organic Carbon

Event 3: 5/14/2000 23:53 - 5/16/2000 20:40

Cycle	Station	Time Collected	Duplicate	Dissolved Organic Carbon mgC/L	SD
7	1	5/15/00 23:34		7.28	
7	2	5/15/00 23:54		7.67	
7	3	5/16/00 0:08		7.24	
7	4	5/16/00 0:17		6.13	
7	5				
8	1	5/16/00 3:25	✓	7.14/7.03	0.15
8	2	5/16/00 3:38		7.50	
8	3	5/16/00 3:48		6.49	
8	4	5/16/00 3:50		4.78	
8	5	5/16/00 4:05		3.79	
9	1	5/16/00 7:45		3.34	
9	2	5/16/00 8:00		7.01	
9	3	5/16/00 8:10		6.80	
9	4	5/16/00 8:29		5.03	
9	5	5/16/00 8:36		4.25	
10	1	5/16/00 11:30	✓	7.05/6.90	0.21
10	2	5/16/00 11:38		7.49	
10	3	5/16/00 11:51		7.21	
10	4	5/16/00 12:13		5.73	
10	5	5/16/00 12:25		3.74	
11	1	5/16/00 15:26	✓	7.77/7.87	0.15
11	2	5/16/00 15:50		7.66	
11	3	5/16/00 15:55		6.99	
11	4	5/16/00 16:10		6.80	
11	5	5/16/00 16:20		4.77	
12	1	5/16/00 19:45		7.37	
12	2	5/16/00 19:55		7.06	
12	3	5/16/00 20:05		6.02	
12	4	5/16/00 20:25		4.42	
12	5	5/16/00 20:40		3.33	

✓ : Duplicate measured
NA: Data not available

TABLE 6

Summary Data for Total Kjeldahl Nitrogen

Event 3: 5/14/2000 23:53 - 5/16/2000 20:40

Cycle	Station	Time Collected	Total Kjeldahl Nitrogen	
			TKN mg/L	Duplicate mg/L
1	1	5/14/00 23:53	0.90	
1	2	5/15/00 0:08	1.23	
1	3	5/15/00 0:19	1.28	1.33
1	4	5/15/00 0:39	1.13	
1	5	5/15/00 0:49	0.73	
2	1	5/15/00 3:43	1.06	
2	2	5/15/00 3:56	1.71	
2	3	5/15/00 4:08	1.20	
2	4	5/15/00 4:23	0.99	0.88
2	5	5/15/00 4:34	0.56	
3	1	5/15/00 7:50	1.01	
3	2	5/15/00 8:01	1.23	
3	3	5/15/00 8:11	1.30	1.01
3	4	5/15/00 8:34	0.97	
3	5	5/15/00 8:40	0.55	
4	1	5/15/00 11:36	0.92	
4	2	5/15/00 11:54	1.18	
4	3	5/15/00 12:06	1.14	
4	4	5/15/00 12:25	1.15	
4	5	5/15/00 12:33	0.82	
5	1	5/15/00 15:52	0.98	
5	2	5/15/00 16:02	1.21	
5	3	5/15/00 16:12	1.14	1.21
5	4	5/15/00 16:28	0.88	
5	5	5/15/00 16:40	0.72	
6	1	5/15/00 19:43	1.09	
6	2	5/15/00 19:55	1.28	
6	3	5/15/00 20:05	1.07	
6	4	5/15/00 20:22	0.84	
6	5	5/15/00 20:32	0.67	

Table 6

Summary Data for Total Kjeldahl Nitrogen

Event 3: 5/14/2000 23:53 - 5/16/2000 20:40

Cycle	Station	Time Collected	Total Kjeldahl Nitrogen	
			TKN mg/L	Duplicate mg/L
7	1	5/15/00 23:34	0.71	
7	2	5/15/00 23:54	NA	
7	3	5/16/00 0:08	1.13	1.31
7	4	5/16/00 0:17	1.12	
7	5	5/16/00 0:27	0.76	
8	1	5/16/00 3:25	0.96	
8	2	5/16/00 3:38	1.12	
8	3	5/16/00 3:48	0.77	
8	4	5/16/00 3:51	1.03	
8	5	5/16/00 4:05	0.67	
9	1	5/16/00 7:45	0.93	0.97
9	2	5/16/00 8:00	NA	
9	3	5/16/00 8:10	0.72	1.01
9	4	5/16/00 8:29	0.95	
9	5	5/16/00 8:36	1.23	0.90
10	1	5/16/00 11:30	0.97	
10	2	5/16/00 11:38	2.73	
10	3	5/16/00 11:51	1.17	
10	4	5/16/00 8:29	1.29	0.88
10	5	5/16/00 12:25	0.86	
11	1	5/16/00 15:26	0.90	
11	2	5/16/00 15:40	1.11	
11	3	5/16/00 15:50	1.23	1.37
11	4	5/16/00 16:10	1.18	
11	5	5/16/00 16:20	0.95	
12	1	5/16/00 19:45	0.85	
12	2	5/16/00 19:55	1.28	
12	3	5/16/00 20:05	1.13	
12	4	5/16/00 20:25	0.99	
12	5	5/16/00 20:40	0.86	

Table 7

Summary Data for Water Quality

Event 3: 5/14/2000 23:53 - 5/16/2000 20:40

Cycle	Station	Time Collected	Duplicate	Hydrolab® Data			
				Temp °C	pH Units	SpCond µS/cm	DO mg/l
1	1	5/14/00 23:53		24.11	6.92	312.00	2.71
1	2	5/15/00 0:08		24.31	7.04	316.80	1.52
1	3	5/15/00 0:19		25.15	7.07	335.20	1.41
1	4	5/15/00 0:39		25.35	7.16	339.20	2.28
1	5	5/15/00 0:49		25.45	7.24	304.50	4.66
2	1	5/15/00 3:43		24.07	7.16	350.30	3.04
2	2	5/15/00 3:56		24.74	7.10	334.30	1.31
2	3	5/15/00 4:08		25.11	7.10	338.60	1.86
2	4	5/15/00 4:23		25.07	7.23	316.50	3.92
2	5	5/15/00 4:34		24.99	7.58	287.10	4.97
3	1	5/15/00 7:50		23.60	7.39	325.40	3.65
3	2	5/15/00 8:01		24.30	7.28	335.60	1.28
3	3	5/15/00 8:11		24.78	7.16	338.40	1.71
3	3	5/15/00 8:13	✓	24.67	7.13	338.60	1.70
3	4	5/15/00 8:34		24.90	7.29	317.50	3.10
3	5	5/15/00 8:40		24.70	7.34	291.40	5.37
4	1	5/15/00 11:36		24.43	7.10	330.60	3.50
4	2	5/15/00 11:54		23.91	7.08	333.80	1.20
4	3	5/15/00 12:06		24.94	7.09	333.50	1.97
4	3	5/15/00 12:10	✓	24.96	7.08	334.10	1.95
4	4	5/15/00 12:25		25.21	7.18	335.90	2.75
4	5	5/15/00 12:33		25.24	7.38	307.20	4.61
5	1	5/15/00 15:52		24.92	7.17	329.30	4.03
5	2	5/15/00 16:02		25.17	7.26	326.60	2.81
5	3	5/15/00 16:12		25.99	7.31	337.20	4.02
5	4	5/15/00 16:28		25.49	7.42	315.50	4.60
5	4	5/15/00 16:30		25.47	7.42	315.70	4.50
5	5	5/15/00 16:40		25.74	6.51	293.20	6.46
6	1	5/15/00 19:43		24.88	7.19	332.30	3.34
6	2	5/15/00 19:55		25.40	7.16	334.90	2.19
6	3	5/15/00 20:05		25.40	7.21	334.00	3.13
6	4	5/15/00 20:22		25.24	7.39	316.60	4.63
6	5	5/15/00 20:32		25.13	7.59	293.00	5.90

✓ : Duplicate sample taken.

Table 7

Summary Data for Water Quality

Event 3: 5/14/2000 23:53 - 5/16/2000 20:40

Cycle	Station	Time Collected	Duplicate	Hydrolab® Data			
				Temp °C	pH Units	SpCond mS/cm	DO mg/l
7	1	5/15/00 23:34		25.09	7.33	330.00	5.04
7	2	5/15/00 23:54		24.27	7.08	324.90	2.05
7	3	5/16/00 0:08		24.67	7.09	328.30	1.87
7	4	5/16/00 0:17		25.00	7.16	337.00	2.62
7	5	5/16/00 0:27		24.84	7.80	309.30	4.41
8	1	5/16/00 3:25		23.97	7.14	344.40	3.21
8	2	5/16/00 3:38		23.87	7.05	326.00	1.32
8	3	5/16/00 3:48		24.12	7.10	338.70	1.85
8	3	5/16/00 3:50	✓	24.18	7.08	338.80	2.07
8	4	5/16/00 3:51		24.63	7.22	325.50	2.90
8	5	5/16/00 4:05		24.41	7.41	301.90	4.28
9	1	5/16/00 7:45		23.38	7.23	335.70	2.16
9	2	5/16/00 8:00		23.68	7.14	335.80	1.37
9	3	5/16/00 8:10		24.12	7.17	326.10	2.54
9	4	5/16/00 8:29		24.40	7.20	316.70	3.16
9	5	5/16/00 8:36		24.28	7.37	295.70	5.05
10	1	5/16/00 11:30		23.31	7.06	334.20	3.82
10	2	5/16/00 11:38		23.57	7.13	329.80	2.08
10	3	5/16/00 11:51		23.80	7.07	335.20	7.73
10	4	5/16/00 12:13		24.40	7.14	327.80	3.09
10	5	5/16/00 12:25		24.58	7.34	310.60	6.07
11	1	5/16/00 15:26		23.05	7.14	335.20	3.92
11	2	5/16/00 15:40		23.97	7.12	329.30	2.82
11	3	5/16/00 15:50		24.44	7.30	336.60	2.91
11	3	5/16/00 15:55	✓	24.43	7.13	336.90	2.85
11	4	5/16/00 16:10		24.41	7.23	322.30	2.94
11	5	5/16/00 16:20		25.09	7.64	305.90	6.80
12	1	5/16/00 19:45		23.62	7.14	344.10	3.94
12	2	5/16/00 19:55		24.24	7.13	336.20	3.11
12	3	5/16/00 20:05		24.48	7.26	331.30	4.23
12	4	5/16/00 20:25		24.51	7.41	319.10	4.74
12	5	5/16/00 20:40		24.31	7.52	302.10	5.31

✓ : Duplicate sample taken.

APPENDIX 1

Technician Log

Field Conditions Sheet

Lab Conditions Sheet

Technician Log

Sign in and out of every shift

Name	Sign In Time	Sign In Date	Sign Out Time	Sign Out Date
John Pohlman	18:00 5/13/00	5/13/00	7:15	5/14/00
Clark Mitchell	19:30 5/13/00	5/13/00	~~5/14/00~~ 23:00	5/13/00
Bill Green	~~5/13~~ 22:00	5/13/00	12:25 pm	5/14/00
Alyssa Gall	0:00 5/14/00	5/14/00	12:00	5/14/00
Clark Mitchell	0845 5/14	5/14/00	19:30	5/14/00
Mark Pyle	2030	5/14/00	7:00	5/15/00
John Pohlman	11:00	5/14/00	23:00	5/15/00
Chris Janetopoulos	18:00	5/14/00	3:00	5/15/00
Clark Mitchell	5:00	5/15/00	19:00	5/15/00
John Pohlman	7:30	5/15/00	23:50	5/15/00
Chad Miller	23:00	~~5/14~~ 5/15/00	1:00	5/15/00
Chase Lauderdale	11:00	5/15/00	23:00	5/15/00
Bill Green	20:30	5/15/00	11:00	5/15/00
Clark Mitchell	05:30	5/16/00	08:00	5/16/00
			Shifts	
John P	13.5 + 12 +	16 = 41.5	3.5	
Clark M	3.5 + 14 +	14.5 = 32	2.5	
Bill Green	14.5 + 2.5	= 17	1.5	
Alyssa Gall	12	= 12	1	
Mark Pyle	10.5	= 10.5	1	
Chris J	15	= 15	1.5	
Chad Miller	12	= 12	1	
Chase Lauderdale	12	= 12	1	
			13	

Field Conditions

Record Field Conditions before each sampling session

Date	Time	Temp (F)	Humidity	Technician	Description of Weather (if rain -- drizzle, sprinkle, shower, hard rain, storm)
5/14/04	11:30	70°C	75%	jp	clearing, no rain
5/14/04	3:15	64°C	75%	jp	clear
5/14	9:03	66	38	jp	Clear Sunny
5/14	13:10	79	23	[illegible]	clear Sunny
5/14	1500	81	28	[illegible]	Sunny
5/14	19:15	73	28	jp	clear + sunset
5/14	23:15	73	34	MRP	partly cloudy; mostly clear
5/15/00	03:15	57	39	CMM	CLOUDY / CLEAR (cirrus)
5/15/01	07:00	54	51	[illegible]	CLEAR + SUNNY
5/15/02	11:00	75	24	[illegible]	[illegible]
5/15/03	15:10	73	24	[illegible]	PARTLY CLOUDY
5/15/04	19:17	68	33	jp	pc-ty cloudy

Field Lab Conditions

Record field lab conditions after each sampling session

Date	Time	Temp (°C)	Humidity	Technician	Comments
5/14/00	1:03	72°F	21	JP	~~C~~
5/14/00	4:50	70°F	59	JP	
5/14/00	9:03	~~66~~ 75	~~38~~ 42	CMM	
5/14/00	1247	82	32	CMM	
5/14/00	1650	79	33	CMM	
5/14/00	20:43	73	43	JP	
5/14/00	0041	72	37	JP	
5/15/00	0417	68	37	CMM	
5/15/00	0850	70	35	CMM	
5/15/00	12:38	79	31	CMM	
5/15/00	21:15	65	37	JP	

APPENDIX 2

PE Evaluations

QA/QC Data from CAL

Analytical Products Group, Inc.

PERFORMANCE REPORT

WP Performance Summary

May 2000

APG Customer Code: 11045

Geo-Centers Inc
c/o NRL Building 207 RM 202
4555 Overlook Ave. SW
Washington, DC 20375

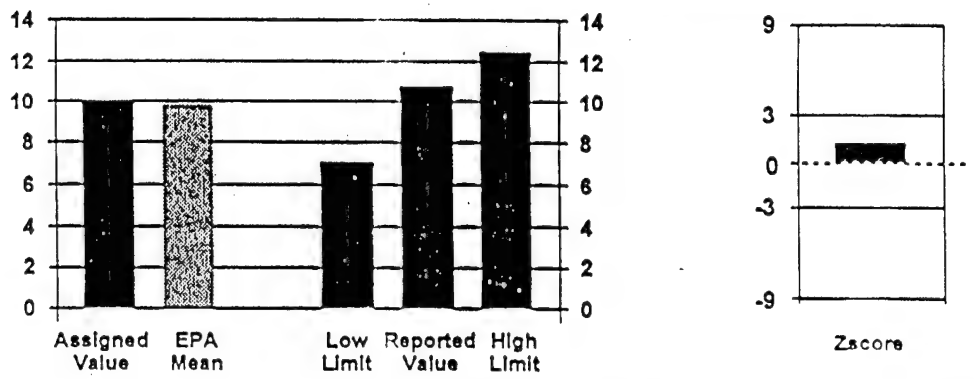
Laboratory of
EXCELLENCE

Product: Nutrient

Analyte	Product Level	Analyte Code	Reported Value	Assigned Value	Acceptance Range	Z-Score	Test Method	Evaluation
Ammonia Nitrogen as N	WP	31		2.14	1.59-2.7			
Ammonia Nitrogen as N	APG+	31		6.95	5.36-8.49			
Nitrate Nitrogen as N	WP	32		11.1	8.77-13.2			
Nitrate Nitrogen as N	APG+	32		8.31	6.56-9.89			
Orthophosphate as P	WP	33		3.42	2.92-3.96			
Orthophosphate as P	APG+	33		4.68	3.99-5.4			
Total Kjeldahl Nitrogen	WP	34	10.75	9.89	7.04-12.5	1.08	EPA 351.2	Acceptable
Total Kjeldahl Nitrogen	APG+	34	7.52	6.57	4.56-8.46	1.55	EPA 351.2	Acceptable
Total Phosphorus as P	WP	35		3.44	2.61-4.04			
Total Phosphorus as P	APG+	35		5.84	4.44-6.83			

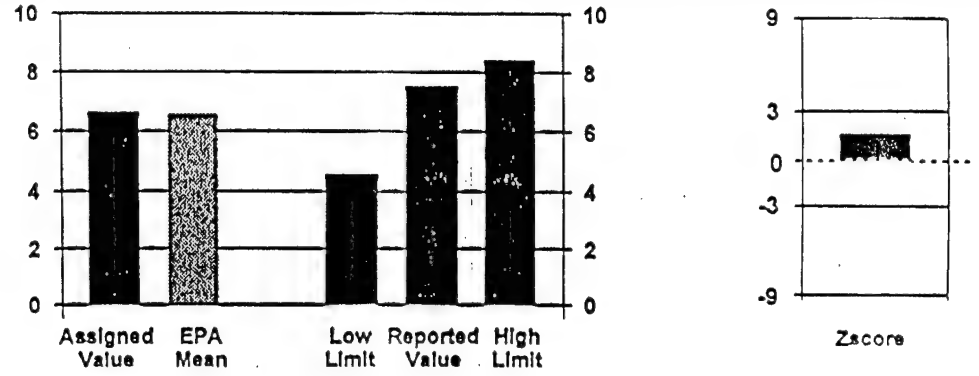
Nutrient Total Kjeldahl Nitrogen **Test Method** EPA 351.2 **Product Level** WP

Reported Value	10.75
Assigned Value	9.89
APG Certified Value	10.3 ± 0.12
EPA Mean	9.77
EPA Standard Deviation	0.91
Acceptance Range	7.04 - 12.5
Z-Score	1.08
Evaluation	Acceptable
Inter-Laboratory Statistics	
Study Mean	10.5
Study Standard Deviation	1.36
Number of Labs Reporting	38
Your Ranking	19/33
Laboratory Pass Percentage	86.84%



Nutrient Total Kjeldahl Nitrogen **Test Method** EPA 351.2 **Product Level** APG

Reported Value	7.52
Assigned Value	6.57
APG Certified Value	6.83 ± 0.049
EPA Mean	6.51
EPA Standard Deviation	0.65
Acceptance Range	4.56 - 8.46
Z-Score	1.55
Evaluation	Acceptable
Inter-Laboratory Statistics	
Study Mean	6.88
Study Standard Deviation	0.51
Number of Labs Reporting	20
Your Ranking	12/17
Laboratory Pass Percentage	85.00%



Analytical Products Group, Inc.

PERFORMANCE REPORT

WP Performance Summary

August 2000

APG Customer Code: 11045

Geo-Centers Inc
c/o NRL Building 207 RM 202
4555 Overlook Ave. SW
Washington, DC 20375

Laboratory of
EXCELLENCE

APG Customer 11045 Geo-Centers Inc
EPA Lab Code N/A 4555 Overlook Ave. SW
Washington, DC 20375

Performance Summary

WP August 2000
Study Closing Date 09/15/2000

Product: Nutrient **Lot Number: 28516-28517**

Analyte	Product Level	Analyte Code	Reported Value	Assigned Value	Acceptance Range	Z-Score	Test Method	Evaluation
Ammonia Nitrogen as N	WP	31	8.21	8.12	6.27-9.89	0.22	EPA 350.1	Acceptable
Ammonia Nitrogen as N	APG+	31	6.00	6.02	4.62-7.36	0.013	EPA 350.1	Acceptable
Nitrate Nitrogen as N	WP	32	7.65	6.93	5.46-8.25	1.68	EPA 353.2	Acceptable
Nitrate Nitrogen as N	APG+	32	2.09	1.94	1.5-2.34	1.2	EPA 353.2	Acceptable
Orthophosphate as P	WP	33	5.36	5.1	4.36-5.89	0.92	EPA 365.1	Acceptable
Orthophosphate as P	APG+	33	4.10	3.87	3.3-4.47	1.09	EPA 365.1	Acceptable
Total Kjeldahl Nitrogen	WP	34		8.88	6.29-11.3			
Total Kjeldahl Nitrogen	APG+	34		4.09	2.71-5.47			
Total Phosphorus as P	WP	35	7.16	5.6	4.26-6.56	4.61	EPA 365.1	Not Acceptable
Total Phosphorus as P	APG+	35	5.03	3.76	2.86-4.42	5.35	EPA 365.1	Not Acceptable

Performance Summary

Product: Nutrient **Exception Reporting**

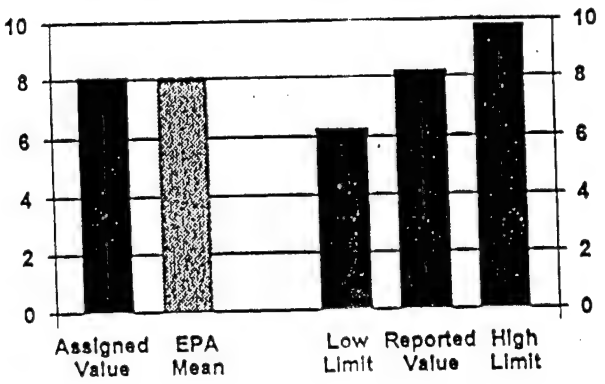
Analyte	Product Level	Analyte Code	Reported Value	Assigned Value	Acceptance Range	Z-Score	Test Method	Evaluation
Total Phosphorus as P	WP	35	7.16	5.6	4.26-6.56	4.61	EPA 365.1	Not Acceptable
Total Phosphorus as P	APG+	35	5.03	3.76	2.86-4.42	5.35	EPA 365.1	Not Acceptable

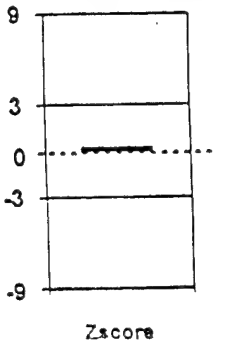
APG Customer 11045 Geo-Centers Inc
EPA Lab Code N/A 4555 Overlook Ave. SW
Washington, DC 20375

WP August 2000
Study Closing Date 09/15/2000

Nutrient: Ammonia Nitrogen as N Test Method: EPA 350.1 Product Level: WP

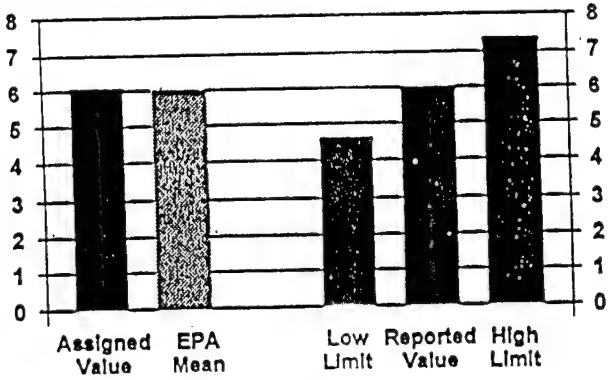
Reported Value	8.21
Assigned Value	8.12
APG Certified Value	8 ± 0.023
EPA Mean	8.08
EPA Standard Deviation	0.6
Acceptance Range	6.27 - 9.89
Z-Score	0.22
Evaluation	Acceptable
Inter-Laboratory Statistics	
Study Mean	8.18
Study Standard Deviation	0.54
Number of Labs Reporting	36
Your Ranking	5/28
Laboratory Pass Percentage	97.22%

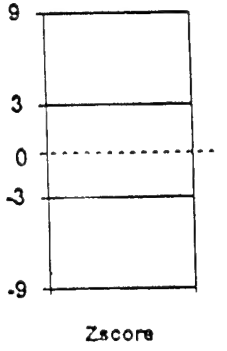




Nutrient: Ammonia Nitrogen as N Test Method: EPA 350.1 Product Level: APG

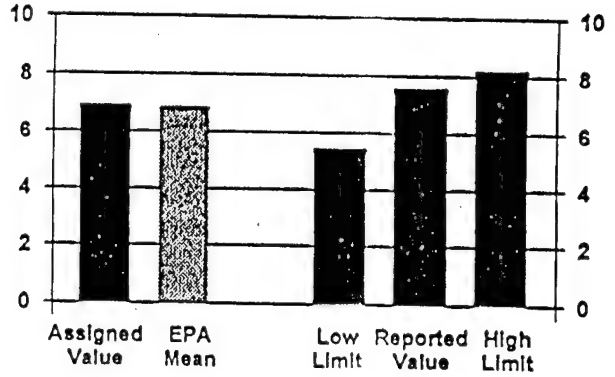
Reported Value	6.00
Assigned Value	6.02
APG Certified Value	6.01 ± 0.05
EPA Mean	5.99
EPA Standard Deviation	0.46
Acceptance Range	4.62 - 7.36
Z-Score	0.013
Evaluation	Acceptable
Inter-Laboratory Statistics	
Study Mean	6.22
Study Standard Deviation	0.41
Number of Labs Reporting	25
Your Ranking	2/25
Laboratory Pass Percentage	96.00%

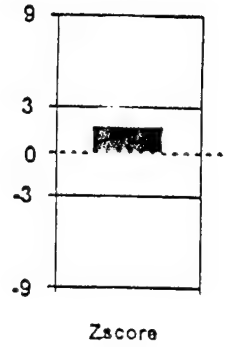




Nutrient: Nitrate Nitrogen as N Test Method: EPA 353.2 Product Level: WP

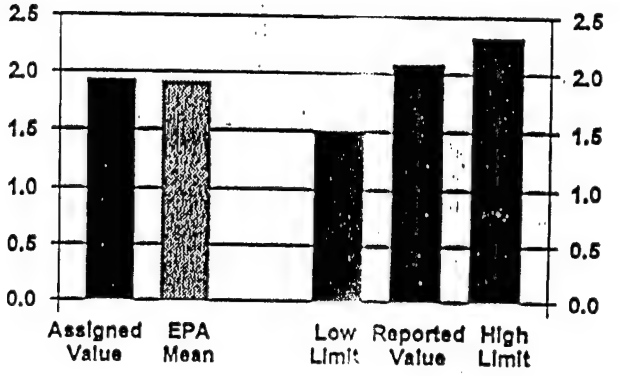
Reported Value	7.65
Assigned Value	6.93
APG Certified Value	7.04 ± 0.01
EPA Mean	6.86
EPA Standard Deviation	0.47
Acceptance Range	5.46 - 8.25
Z-Score	1.68
Evaluation	Acceptable
Inter-Laboratory Statistics	
Study Mean	7.07
Study Standard Deviation	0.55
Number of Labs Reporting	22
Your Ranking	17/21
Laboratory Pass Percentage	90.91%

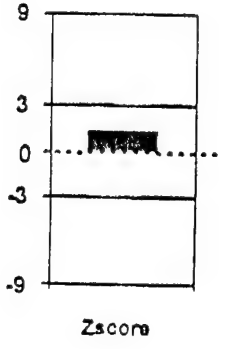




Nutrient: Nitrate Nitrogen as N Test Method: EPA 353.2 Product Level: APG

Reported Value	2.09
Assigned Value	1.94
APG Certified Value	1.94 ± 0.027
EPA Mean	1.92
EPA Standard Deviation	0.14
Acceptance Range	1.5 - 2.34
Z-Score	1.2
Evaluation	Acceptable



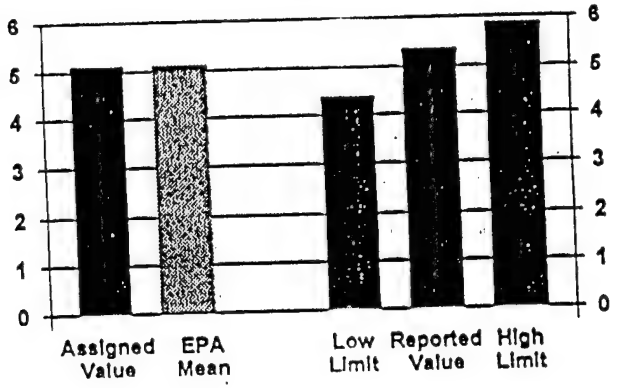


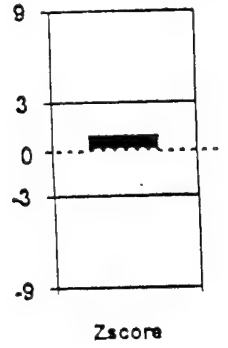
APG Customer 11045 Geo-Centers Inc
EPA Lab Code N/A 4555 Overlook Ave. SW
Washington, DC 20375

Study Closing Date 09/15/2000

Nutrient: Orthophosphate as P Test Method: EPA 365.1 Product Level: WP

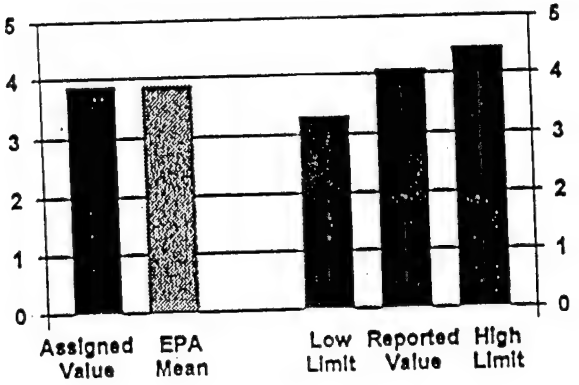
Reported Value	5.36
Assigned Value	5.1
APG Certified Value	5.05 ± 0.034
EPA Mean	5.12
EPA Standard Deviation	0.26
Acceptance Range	4.36 - 5.89
Z-Score	0.92
Evaluation	Acceptable
Inter-Laboratory Statistics	
Study Mean	5.21
Study Standard Deviation	0.18
Number of Labs Reporting	20
Your Ranking	11/14
Laboratory Pass Percentage	100.00%

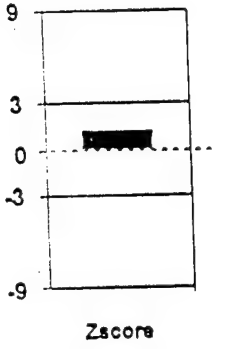




Nutrient: Orthophosphate as P Test Method: EPA 365.1 Product Level: APG

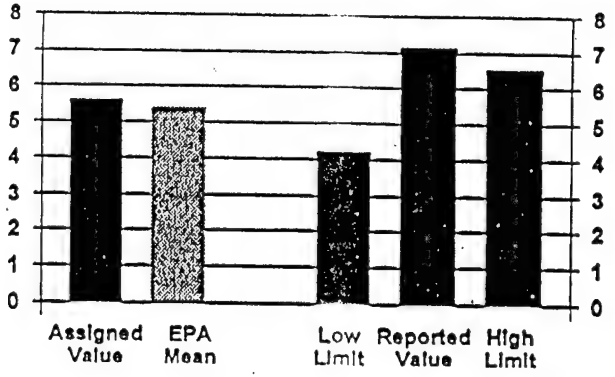
Reported Value	4.10
Assigned Value	3.87
APG Certified Value	3.87 ± 0.032
EPA Mean	3.89
EPA Standard Deviation	0.2
Acceptance Range	3.3 - 4.47
Z-Score	1.09
Evaluation	Acceptable

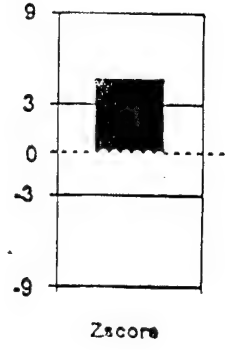




Nutrient: Total Phosphorus as P, Test Method: EPA 365.1, Product Level: WP

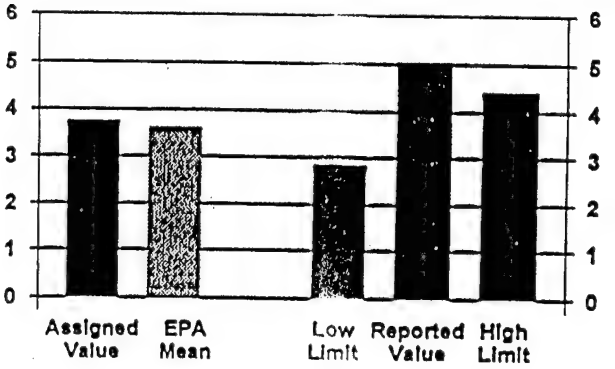
Reported Value	7.16
Assigned Value	5.6
APG Certified Value	5.58 ± 0.033
EPA Mean	5.41
EPA Standard Deviation	0.38
Acceptance Range	4.26 - 6.56
Z-Score	4.61
Evaluation	Not Acceptable
Inter-Laboratory Statistics	
Study Mean	5.7
Study Standard Deviation	0.32
Number of Labs Reporting	21
Your Ranking	19/20
Laboratory Pass Percentage	90.48%

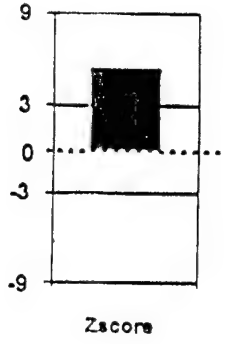




Nutrient: Total Phosphorus as P, Test Method: EPA 365.1, Product Level: APG

Reported Value	5.03
Assigned Value	3.76
APG Certified Value	3.77 ± 0.036
EPA Mean	3.64
EPA Standard Deviation	0.26
Acceptance Range	2.86 - 4.42
Z-Score	5.35
Evaluation	Not Acceptable



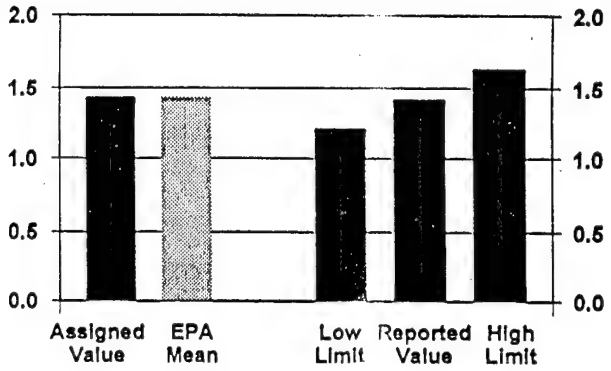


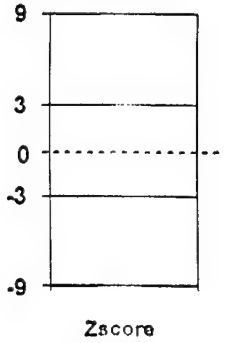
Product: Nutrients **Lot Number: 28594-28595-28596**

Analyte	Product Level	Analyte Code	Reported Value	Assigned Value	Acceptance Range	Z-Score	Test Method	Evaluation
Fluoride	WS	10		5.88	5.29-6.46			
Nitrate Nitrogen as N	WS	9		5.22	4.7-5.74			
Nitrite as N	WS	92	1.42	1.43	1.21-1.64	0.073	EPA 353.2	Acceptable
Orthophosphate as P	WS	261		1.37	1.29-1.44			

Nutrients	Nitrite as N	Test Method	EPA 353.2	Product Level WS

Reported Value	1.42
Assigned Value	1.43
APG Certified Value	1.47 ± 0.004
EPA Mean	1.43
EPA Standard Deviation	0.11
Acceptance Range	1.21 - 1.64
Z-Score	-0.073
Evaluation	Acceptable
Inter-Laboratory Statistics	
Study Mean	1.43
Study Standard Deviation	0.075
Number of Labs Reporting	41





Laboratory Pass Percentage 97.56%

Nutrients	Orthophosphate as P	Product Level WS

Reported Value	Unreported
Assigned Value	1.37
APG Certified Value	1.4 ± 0.002
EPA Mean	1.37
EPA Standard Deviation	0.037
Acceptance Range	1.29 - 1.44
Z-Score	
Evaluation	

Spike QA/QC Results from previous sample group (~~Event 3~~)

Sample ID	result	Spike mg/l	spike result	% recovery
153	0.78	1.0.	1.88	110
218	1.00	1.0	2.02	100
362	1.23	1.0	2.19	96
16	0.86	2.0	2.36	75
112	2.23	1.0	2.23	97
3117	1.13	1.0	2.04	91
306	0.73	1.0	1.74	100
307	1.23	1.0	1.87	65
405	0.99	2.0	3.24	112
421	2.65	1.0	2.91	26
439	0.72	1.0	1.61	89
424	0.97	2.0	2.72	87.5
482	0.77	2.0	2.80	101

Secondary Source QA sample

DATE	QA True Value	RESULTS	% Recovery
9-20-00	8.90	8.01	89
9-14-00	8.90	9.45	105
9-18-00	8.90	9.27	104
6-16-00	9.3	9.78	105
6-10-00	8.9	9.1	102
6-13-00	9.3	10.4	111
9-25	8.9	7.99	89

Event 3 Blank Table

	Field 1	Field 2	Field 3	Field 4	Equip
TSS (mg/L)	7.43	11.4	3.42	2.78	3.68
VSS (mg/L)	2.78	5.14	12.08	4.57	3.68
TOC (mg/L)	0	0.573622	0.039146	0	
DOC (mg/L)	0	0.171346		0	0.28
TKN (mg/L)	NA				
NH4 (mg/L)	0	0	0.005	0.004	0
TON (mg/L)	0	0	0.1	0	0
o-PO4 (mg/L)	0.003	0.003	0.003	0.003	0.003
T-PO4 (mg/L)	NA				

APPENDIX 3

Chain of Custody Forms (NRL)

Chain of Custody Forms (CAL)

Environmental Quality Sciences
U.S. Naval Research Laboratory
Code 6115, 4555, Overlook Ave Sw
Washington D.C. 20375
202-404-6416 Fax: 202-404-8515

Chain of Custody

Date 5/15/22 Page 1 of 1

Project Manager: John Pohlman
Organization: USNRL, Code 6115
Address:

Ship To:
Organization:
Address:

Sampler (Signature) 2024041736 Phone Number

Recommended Quantity and Preservative (Provide triple volume for QC samples)

Sample ID	Sample Date	Time	Matrix	Lab ID
SS-cycle 1-8	5/13-15		filter	
K-cycle 1-8	"		H_2O	
N-cycle 1-8	"		H_2O	
P-cycle 1-8	"		H_2O	
PC-cycle 1-8	"		filter	
TC-cycle 1-8	"		H_2O	
DC-cycle 1-8	"		H_2O	
Field Blanks	"		—	
Equip Blanks	"		—	

LABORATORY ANALYSIS	Fecal coliforms	200ml in $Na_2S_2O_3$	Nutrients	Orthophosphate	Dissolved Organic Carbon	Particulate Organic Carbon	TKN	Total phosphorus	Total suspended soils	Volatile suspended soils	CBODs	TDC	FIELD CONDITIONS	pH	Temperature °C	Conductivity	Dissolved Oxygen mg/L	Turbidity °C	RECIEPT CONDITIONS	Temperature °C	Number of Containers
SS-cycle 1-8									✓	✓									-2°		8
K-cycle 1-8							✓												4°		8
N-cycle 1-8			✓	✓															-2°		8
P-cycle 1-8								✓											-2°		8
PC-cycle 1-8						✓													-2°		8
TC-cycle 1-8												✓							4°		8
DC-cycle 1-8					✓														4°		8
Field Blanks			✓	✓	✓	✓	✓	✓	✓	✓		✓							-		21
Equip Blanks			✓	✓	✓	✓	✓	✓	✓	✓		✓							-		7

Project Information

Project Number:
Project Name:
Job Order Number:
Via:

Sample Reciept

Total Number of Containers
Chain of Custody Seals Y/N/NA
Seals Intact? Y/N/NA
Received in Good Condition? Y/N

TAT: ☐ 24h ☐ 48h ☐ 72h ☐ 1wk ☐ 2wk

Sample Disposal Instructions

☐ Disposal ☐ Return ☐ Pickup

Comments:

Relinquished By: 1	Relinquished By: 2	Relinquished By: 3
Signature Time: 7:50	Signature Time:	Signature Time:
Printed Name: Chad M Miller Date: 5/15/22	Printed Name: Date:	Printed Name: Date:
Company:	Company:	Company:

Relinquished By: 1	Relinquished By: 2	Relinquished By: 3
Signature Time:	Signature Time:	Signature Time:
Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Company:	Company:	Company:

Distribution White: Reciplent Canary: Project Manager Pink: Project file

05102

Environmental Quality Sciences
U.S. Naval Research Laboratory
Code 6115, 4555, Overlook Ave Sw
Washington D.C. 20375
202-404-6416 Fax: 202-404-8515

Chain of Custody

Date 5/15/00 Page 1 of 1

Project Manager: John Pohlman
Organization: US NRL, Code 6115
Address:

Ship To:
Organization:
Address:

Sampler (Signature) 2024041736 Phone Number

Recommended Quantity and Preservative (Provide triple volume for QC samples)

Sample ID	Sample Date	Time	Matrix	Lab ID
SS - cycle - 9-12	5/15/00		Filter	
K - cycle 9-12	"		H_2O	
N - cycle 9-12	"		H_2O	
P - cycle 9-12	"		H_2O	
PC - cycle 9-12	"		Filter	
TC - cycle 9-12	"		H_2O	
DC - cycle 9-12	"		H_2O	
Field Blanks	"		—	

LABORATORY ANALYSIS	Fecal coliforms	200ml in $Na_2S_2O_3$	Nutrients	Orthophosphate	Dissolved Organic Carbon	Particulate Organic Carbon	TKN	Total phosphorus	Total suspended soils	Volatile suspended soils	CBODs	TOC	FIELD CONDITIONS	pH	Temperature °C	Conductivity	Dissolved Oxygen mg/L	Turbidity °C	RECIEPT CONDITIONS	Temperature °C	Number of Containers
SS - cycle - 9-12									✓	✓									-20	✓	40
K - cycle 9-12							✓												4	✓	40
N - cycle 9-12			✓	✓															-20	✓	40
P - cycle 9-12								✓											-20	✓	40
PC - cycle 9-12						✓						✓							-20	✓	40
TC - cycle 9-12												✓							4	✓	40
DC - cycle 9-12			✓	✓	✓	✓	✓	✓	✓	✓		✓							4	✓	40
Field Blanks			✓	✓	✓	✓	✓	✓	✓	✓		✓							1		7

Project Information
Project Number:
Project Name:
Job Order Number:
Via:
TAT: ☐ 24h ☐ 48h ☐ 72h ☐ 1wk ☐ 2wk

Sample Reciept
Total Number of Containers: 37
Chain of Custody Seals Y/N/NA: NA
Seals Intact? Y/N/NA: NA
Received Good Condition/Cold Y/N: Y

Sample Disposal Instructions
☐ Disposal ☐ Return ☐ Pickup
Comments:

Relinquished By: 1
Signature: William Green Time: 11:20am
Printed Name: William Green Date: 5/15/00
Company:

Relinquished By: 1
Signature Time:
Printed Name: Date:
Company:

Relinquished By: 2
Signature Time: 11:30
Printed Name: Date: 5/16/00
Company: Seg-Services

Relinquished By: 2
Signature Time:
Printed Name: Date:
Company:

Relinquished By: 3
Signature Time:
Printed Name: Date:
Company:

Relinquished By: 3
Signature Time:
Printed Name: Date:
Company:

Distribution White: Recipient Canary: Project Manager Pink: Project file

Environmental Quality Sciences
U.S. Naval Research Laboratory
Code 6115, 4555, Overlook Ave Sw
Washington D.C. 20375
202-404-6416 Fax: 202-404-8515

Chain of Custody

Date 5/16/00 Page 1 of 1

Project Manager: John Pohlman
Organization: USNRL, Code 6115
Address:

Ship To:
Organization:
Address:

Sampler (Signature): [signature] Phone Number: 2024041736

Sample ID	Sample Date	Time	Matrix	Lab ID
BOD Cycles 1-12	5/13 - 5/15/00		H2O	

Recommended Quantity and Preservative (Provide triple volume for QC samples)

LABORATORY ANALYSIS	Result
Fecal coliforms (200ml in $Na_2S_2O_3$)	
Nutrients	
Orthophosphate	
Dissolved Organic Carbon	
Particulate Organic Carbon	
TKN	
Total phosphorus	
Total suspended soils	
Volatile suspended soils	
CBODs	
BOD	✓
FIELD CONDITIONS	
pH	
Temperature (°C)	
Conductivity	
Dissolved Oxygen (mg/L)	
Turbidity (°C)	
RECIEPT CONDITIONS	r
Temperature (°C)	22°C
Number of Containers	120

Project Information		Sample Reciept	
Project Number:		Total Number of Containers	120
Project Name:		Chain of Custody Seals Y/N/NA	NA
Job Order Number:		Seals Intact? Y/N/NA	NA
Via:		Received in Good Condition? Y/N	X

TAT: ☐ 24h ☐ 48h ☐ 72h ☐ 1wk ☐ 2wk

Sample Disposal Instructions

☐ Disposal ☐ Return ☐ Pickup

Comments:

	Relinquished By: 1	Relinquished By: 2	Relinquished By: 3
Signature	[signature]	[signature]	
Time	10:30	11:00	
Printed Name	John Pohlman	Clark Smitchell	
Date	5/16/00	5/16/00	
Company	Geo-Centers	Geo-Centers	

	Relinquished By: 1	Relinquished By: 2	Relinquished By: 3
Signature			
Time			
Printed Name			
Date			
Company			

Distribution White: Recipient Canary: Project Manager Pink: Project file

05102

Environmental Quality Sciences
U.S. Naval Research Laboratory
Code 6115, 4555, Overlook Ave Sw
Washington D.C. 20375
202-404-6416 Fax: 202-404-8515

Chain of Custody

Date 5/26/16 Page 1 of 1

Project Manager: J. Pohlman
Organization: US NRL, Code 6115
Address:

Ship To: Chesapeake Analytical
Organization: Laboratory
Address:

Sampler (Signature)

202 404 1736
Phone Number

Recommended Quantity and Preservative (Provide triple volume for QC samples)

Sample ID	Sample Date	Time	Matrix	Lab ID
~~F~~ TKN	5/14/16		H2O	
~~K3~~ Event 3				

LABORATORY ANALYSIS	200ml in $Na_2S_2O_3$	FIELD CONDITIONS	RECIEPT CONDITIONS	
Fecal coliforms		pH	Temperature °C	4°C
Nutrients		Temperature °C		
Orthophosphate		Conductivity		
Dissolved Organic Carbon		Dissolved Oxygen mg/L		
Particulate Organic Carbon		Turbidity °C		
TKN ✓				
Total phosphorus				
Total suspended soils				
Volatile suspended soils				
CBODs				
Number of Containers	72			

Project Information

Project Number:
Project Name:
Job Order Number:
Via:
TAT: ☐24h ☐48h ☐72h ☐1wk ☐2wk

Sample Reciept

Total Number of Containers
Chain of Custody Seal Y/N/NA
Seal Intact Y/N/NA
Received Iced Good Condition Y/N

Sample Disposal Instructions

☐ Disposal ☐ Return ☐ Pickup

Comments:
x Chesapeake Analytical Lab
202 301-932-4775

Relinquished By: 1	Relinquished By: 2	Relinquished By: 3
Signature: Time: 13:36	Signature: Time: 1345	Signature: Time:
Printed Name: J. Pohlman Date: 5/26	Printed Name: Richard Orin Date: 5/26	Printed Name: Date:
Company: Gen-Centers	Company: NRL	Company:
Relinquished By: 1	Relinquished By: 2	Relinquished By: 3
Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Company:	Company:	Company:

Distribution White: Reciplent Canary: Project Manager Pink: Project file

CHESAPEAKE ANALYTICAL LAB.
CHAIN OF CUSTODY FORM

106 A ROCKEFELLER CT. WALDORF, MD 20602
301-932-4775

SAMPLE SOURCE	202-404-1736	PAGE ___ OF ___
COMPANY NAME, CONTACT PERSON & PHONE NUMBER: NRL John Pohlman fax 202-404-8515		COLLECTOR'S SIGNATURE :

Code 6115 4555 Overlook Ave SW
Wash DC 20375

CONTAINER TYPE: P=PLASTIC G= GLASS
SAMPLE TYPE: G= GRAB C= COMPOSIT

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	PRESERVATIVE	CONTAINER TYPE	SAMPLE TYPE	ANALYSIS REQUIRED	IN LAB pH
1. Event 3			H_2SO_4 4C			TKN	
(No #ed Sheet supplied made one!)							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

RELEASED BY: _____ D/T: ___/___ @ ___ REC'D BY: _____ D/T: ___/___ @ ___

RELEASED BY: _____ D/T: 13/6/5/26 @ ___ REC'D BY: _____ D/T: ___/___ @ ___

SAMPLES RECEIVED IN LAB BY: AM/H DATE/TIME: 5/26 @ 1346 ICED YES NO TEMP ___

PH CHECKED IN LAB BY: ___ DATE: ___

APPENDIX 4

Laboratory Data Sheets (NRL)

Raw Data Sheets (CAL)

Dissolved Oxygen Titrations

WWMS Event 3

Biological Oxygen Demand

Cycle	Anal ID	Bott_ID	Sta	TP	Time Stored	Time Fixed	Inc. (D)	Tit. Vol	Rep	mg O_2/L	Avg.	Std Dev	BOD (mg/L)	Comments
1	462	82	1	t0		5/14/00 1:57		2.290	1	6.05				
	463	97		t0				2.260	2	5.97	6.01	0.06		
	464	18		t1	5/14/00 1:50	5/18/00 23:55	4.92	0.489	1	0.86				
	465	154		t1				0.471	2	0.81	0.83	0.04	5.18	
	466	33	2	t0		5/14/00 1:57		0.99	1	2.30				
	467	48		t0				0.987	2	2.30	2.30	0.01		
	468	147		t1	5/14/00 1:50	5/18/00 23:55	4.92	0.117	1	0.00				
	469	131		t1				0.015	2	0.00	0.00	0.00	2.30	
	470	21	3	t0		5/14/00 1:57		0.753	1	1.62				
	471	11		t0				0.749	2	1.61	1.62	0.01		
	472	129		t1	5/14/00 1:50	5/18/00 23:55	4.92	0.033	1	0.00				
	473	47		t1				NA	2		0.00	#DIV/0!	1.62	
	474	5	4	t0		5/14/00 1:57		1.168	1	2.82				
	475	112		t0				1.157	2	2.79	2.80	0.02		
	476	98		t1	5/14/00 1:50	5/18/00 23:55	4.92	0.01	1	0.00				
	477	124		t1				0.269	2	0.23	0.11	0.16	2.69	
	478	144	5	t0		5/14/00 1:57		2.324	1	6.15				
	479	19		t0				2.333	2	6.18	6.16	0.02		
	480	17		t1	5/14/00 1:50	5/18/00 23:55	4.92	1.507	1	3.80				
	481	150		t1				1.649	2	4.20	4.00	0.29	**2.16**	
2	482	8	1	t0		5/14/00 5:20		1.535	1	3.88				
	483	97		t0				1.490	2	3.75	3.81	0.09		
	484	48		t1	5/14/00 5:11	5/19/00 4:10	4.96	0.037	1	0.00				
	485	33		t1				0.012	2	0.00	0.00	0.00	3.81	
	486	11	2	t0				0.707	1	1.49				
	487	21		t0				0.667	2	1.37	1.43	0.08		
	488	112		t1			4.96	0.04	1	0.00				
	489	5		t1				0.014	2	0.00	0.00	0.00	1.43	
	490	19	3	t0				1.009	1	2.36				
	491	144		t0				0.932	2	2.14	2.25	0.16		
	492	45		t1			4.96	0.011	1	0.00				

	493	23		t1				0.003	2	0.00	0.00	0.00	2.25
	494	116	4	t0				1.825	1	4.71			
	495	149		t0				1.807	2	4.66	4.69	0.04	
	496	6		t1			4.96	0.571	1	1.10			
	497	95		t1				0.549	2	1.03	1.06	0.04	3.62
	498	15	5	t0				2.614	1	6.99			
	499	99		t0				2.591	2	6.92	6.95	0.05	
	500	115		t1			4.96	2.14	1	5.62			
	501	141		t1				2.027	2	5.29	5.46	0.23	1.50
3	502	8	1	t0		5/14/00 9:15		1.227	1	2.89			
	503	11		t0				1.260	2	3.08	3.04	0.07	
	504	19		t1	5/14/00 8:57	5/19/00 9:15	5.01	0.269	1	0.23			
	505	116		t1				NA	2		0.23	#DIV/0!	2.81
	506	149	2	t0				0.722	1	1.53			
	507	144		t0				0.774	2	1.68	1.61	0.11	
	508	21		t1			5.01	0.013	1	0.00			
	509	97		t1				0.117	2	0.00	0.00	0.00	1.61
	510	80	3	t0				1.052	1	2.48			
	511	36		t0				1.050	2	2.48	2.48	0.00	
	512	99		t1			5.01	0.065	1	0.00			
	513	15		t1				0.015	2	0.00	0.00	0.00	2.48
	514	28	4	t0				1.634	1	4.16			
	515	140		t0				1.719	2	4.41	4.28	0.17	
	516	32		t1			5.01	0.688	1	1.43			
	517	38		t1				0.695	2	1.45	1.44	0.01	2.84
	518	120	5	t0				2.318	1	6.13			
	519	130		t0				2.419	2	6.42	6.28	0.21	
	520	7		t1			5.01	1.456	1	3.65			
	521	27		t1				1.482	2	3.72	3.69	0.05	2.59
4	522	105	1	t0		5/14/00 13:00		1.999	1	5.21			
	523	54		t0				1.809	2	4.67	4.94	0.39	
	524	75		t1	5/14/00 12:47	5/19/00 13:05	5.01	0.269	1	0.23			
	525	148		t1				0.014	2	0.00	0.11	0.16	4.83
	526	59	2	t0				0.679	1	1.41			
	527	63		t0				0.698	2	1.46	1.44	0.04	

	528	110		t1			5.01	0.016	1	0.00				
	529	119		t1				0.015	2	0.00	0.00	0.00	1.44	
	530	58	3	t0				0.991	1	2.31				
	531	65		t0				1.092	2	2.60	2.45	0.21		
	532	142		t1			5.01	0.117	1	0.00				
	533	138		t1				0.035	2	0.00	0.00	0.00	2.45	
	534	89	4	t0				1.411	1	3.52				
	535	143		t0				1.31	2	3.23	3.23			
	536	122		t1			5.01	0.015	1	0.00				
	537	26		t1				0.058	2	0.00	0.00	0.00	3.23	
	538	43	5	t0				2.006	1	5.23				
	539	14		t0				2.189	2	5.76	5.76			
	540	70		t1			5.01	1.098	1	2.62				
	541	106		t1				1.105	2	2.64	2.63	0.01	**3.14**	
5	542	57	1	t0		5/14/00 17:00		2.261	1	5.97				
	543	152		t0				2.313	2	6.12	6.04	0.11		
	544	151		t1	5/14/00 16:50	5/19/00 17:05	5.01	0.269	1	0.23				
	545	88		t1				0.022	2	0.00	0.11	0.16	5.93	
	546	60	2	t0				0.33	1	0.40				
	547	87		t0				1.268	2	3.11	1.75	1.91		
	548	107		t1			5.01	0.022	1	0.00				
	549	16		t1				0.012	2	0.00	0.00	0.00	1.75	
	550	113	3	t0				1.811	1	4.67				
	551	126		t0				1.863	2	4.82	4.75	0.11		
	552	51		t1			5.01	0.269	1	0.23				
	553	94		t1				0.015	2	0.00	0.11	0.16	4.63	
	554	93	4	t0				2.116	1	5.55				
	555	67		t0				2.253	2	5.95	5.75	0.28		
	556	61		t1			5.01	0.692	1	1.45				
	557	85		t1				0.597	2	1.17	1.31	0.19	**4.44**	
	558	1	5	t0				3.101	1	8.39				
	559	40		t0				3.063	2	8.28	8.34	0.08		
	560	52		t1			5.01	1.455	1	3.65				
	561	24		t1				1.467	2	3.68	3.66	0.02	**4.67**	
6	562	118	1	t0		5/14/00 21:00		1.972	1	5.14				

	563	53		t0				1.170	2	2.82	3.98	1.64	
	564	133		t1	5/14/00 20:52	5/19/00 21:40	5.03	0.269	1	0.23			
	565	39		t1				0.014	2	0.00	0.11	0.16	3.87
	566	125	2	t0				1.17	1	2.82			
	567	73		t0				1.194	2	2.89	2.86	0.05	
	568	81		t1			5.03	0.011	1	0.00			
	569	55		t1				0.009	2	0.00	0.00	0.00	2.86
	570	49	3	t0				1.437	1	3.59			
	571	69		t0				1.429	2	3.57	3.58	0.02	
	572	145		t1			5.03	0.085	1	0.00			
	573	44		t1				0.068	2	0.00	0.00	0.00	3.58
	574	109	4	t0				2.237	1	5.90			
	575	46		t0				2.019	2	5.27	5.59	0.44	
	576	86		t1			5.03	0.297	1	0.31			
	577	153		t1				0.371	2	0.52	0.41	0.15	5.17
	578	35	5	t0				2.677	1	7.17			
	579	103		t0				2.666	2	7.14	7.15	0.02	
	580	128		t1			5.03	1.554	1	3.93			
	581	156		t1				1.47	2	3.69	3.81	0.17	3.34
7	582	137	1	t0		5/15/00 0:15		2.065	1	5.40			
	583	34		t0				1.981	2	5.16	5.28	0.17	
	584	121		t1	5/15/00 1:00	5/20/00 1:04	5.00	0.269	1	0.23			
	585	114		t1				0.094	2	0.00	0.11	0.16	5.17
	586	109	2	t0				0.956	1	2.21			
	587	25		t0				0.888	2	2.01	2.11	0.14	
	588	68		t1			5.00	0.081	1	0.00			
	589	56		t1				0.025	2	0.00	0.00	0.00	2.11
	590	73	3	t0				0.899	1	2.04			
	591	69		t0				0.871	2	1.96	2.00	0.06	
	592	103		t1			5.00	0.068	1	0.00			
	593	35		t1				0.012	2	0.00	0.00	0.00	2.00
	594	125	4	t0				1.255	1	3.07			
	595	49		t0				1.14	2	2.74	2.90	0.23	
	596	118		t1			5.00	0.062	1	0.00			
	597	53		t1				0.028	2	0.00	0.00	0.00	2.90

	598	11	5	t0				2.332	1	6.17			
	599	8		t0				2.477	2	6.59	6.38	0.30	
	600	144		t1			5.00	1.126	1	2.70			
	601	149		t1				1.097	2	2.61	2.65	0.06	**3.73**
8	602	109	1	t0		5/15/00 4:30		1.611	1	4.09			
	603	137		t0				1.580	2	4.01	4.05	0.06	
	604	34		t1	5/15/00 4:20	5/20/00 4:32	5.01	0.119	1	0.00			
	605	25		t1				0.269	2	0.23	0.11	0.16	3.94
	606	125	2	t0				0.759	1	1.64			
	607	49		t0				0.753	2	1.62	1.63	0.01	
	608	73		t1			5.01	0.025	1	0.00			
	609	69		t1				0.009	2	0.00	0.00	0.00	1.63
	610	140	3	t0				1.002	1	2.34			
	611	130		t0				1.013	2	2.37	2.35	0.02	
	612	11		t1			5.01	0.079	1	0.00			
	613	8		t1				0.043	2	0.00	0.00	0.00	2.35
	614	28	4	t0				1.574	1	3.99			
	615	120		t0				1.549	2	3.92	3.95	0.05	
	616	143		t1			5.01	0.219	1	0.08			
	617	105		t1				0.228	2	0.11	0.09	0.02	3.86
	618	89	5	t0				2.13	1	5.59			
	619	65		t0				2.153	2	5.66	5.62	0.05	
	620	58		t1			5.01	0.927	1	2.12			
	621	54		t1				0.921	2	2.11	2.11	0.01	**3.51**
9	622	137	1	t0		5/15/00 9:00		1.188	1	2.88			
	623	109		t0				1.231	2	3.00	2.94	0.09	
	624	125		t1	5/15/00 8:49	5/20/00 8:30	4.99	0.269	1	0.23			
	625	49		t1				0.016	2	0.00	0.11	0.16	2.82
	626	57	2	t0				0.804	1	1.77			
	627	126		t0				0.769	2	1.67	1.72	0.07	
	628	93		t1			4.99	0.01	1	0.00			
	629	152		t1				0.066	2	0.00	0.00	0.00	1.72
	630	140	3	t0				1.416	1	3.53			
	631	130		t0				1.370	2	3.40	3.47	0.09	
	632	63		t1			4.99	0.293	1	0.29			

	633	14		t1				0.188	2	0.00	0.15	0.21	3.32
	634	65	4	t0				1.801	1	4.64			
	635	89		t0				1.807	2	4.66	4.65	0.01	
	636	59		t1			4.99	0.82	1	1.81			
	637	113		t1				0.787	2	1.72	1.77	0.07	**2.88**
	638	43	5	t0				2.137	1	5.61			
	639	31		t0				2.112	2	5.54	5.58	0.05	
	640	28		t1			4.99	1.111	1	2.65			
	641	120		t1				0.021	2	0.00	1.33	1.88	**4.25**
10	642	71	1	t0		5/15/00 12:50		1.599	1	4.06			
	643	139		t0				1.630	2	4.15	4.10	0.06	
	644	66		t1	5/15/00 12:37	5/20/00 12:15	4.98	0.025	1	0.00			
	645	96		t1				0.018	2	0.00	0.00	0.00	4.10
	646	29	2	t0				1.011	1	2.36			
	647	157		t0				1.092	2	2.60	2.48	0.17	
	648	91		t1			4.98	0.012	1	0.00			
	649	42		t1				0.012	2	0.00	0.00	0.00	2.48
	650	50	3	t0				1.019	1	2.39			
	651	74		t0				1.013	2	2.37	2.38	0.01	
	652	2		t1			4.98	0.061	1	0.00			
	653	78		t1				0.018	2	0.00	0.00	0.00	2.38
	654	127	4	t0				1.638	1	4.17			
	655	9		t0				1.642	2	4.18	4.18	0.01	
	656	76		t1			4.98	0.269	1	0.23			
	657	87		t1				0.376	2	0.53	0.38	0.22	3.80
	658	135	5	t0				2.338	1	6.19			
	659	22		t0				2.359	2	6.25	6.22	0.04	
	660	92		t1			4.98	1.378	1	3.42			
	661	155		t1				1.287	2	3.16	3.29	0.19	**2.93**
11	662	146	1	t0		5/15/00 16:55		2.963	1	7.99			
	663	29		t0				3.000	2	8.10	8.05	0.08	
	664	139		t1	5/15/00 16:50	5/20/00 17:30	5.03	0.855	1	1.92			
	665	71		t1				0.767	2	1.66	1.79	0.18	**6.26**
	666	158	2	t0				1.493	1	3.75			
	667	132		t0				1.416	2	3.53	3.64	0.16	

	668	90		t1			5.03	0.19	1	0.00				
	669	104		t1				0.637	2	1.29	0.64	0.91	3.00	
	670	134	3	t0				1.361	1	3.37				
	671	102		t0				1.409	2	3.51	3.44	0.10		
	672	30		t1			5.03	0.269	1	0.23				
	673	117		t1				0.531	2	0.98	0.60	0.53	2.84	
	674	47	4	t0				1.365	1	3.39				
	675	72		t0				1.866	2	4.83	4.11	1.02		
	676	101		t1			5.03	0.578	1	1.12				
	677	20		t1				0.866	2	1.95	1.53	0.59	2.58	
	678	3	5	t0				3.35	1	9.11				
	679	41		t0				3.242	2	8.80	8.95	0.22		
	680	123		t1			5.03	2.145	1	5.63				
	681	136		t1				2.767	2	7.43	6.53	1.27	2.42	
12	682	89	1	t0		5/15/00 21:38		1.820	1	4.70				
	683	43		t0				1.912	2	4.96	4.83	0.19		
	684	65		t1	5/15/00 21:30	5/20/00 22:30	5.04	0.269	1	0.23				
	685	126		t1				0.486	2	0.85	0.54	0.44	4.29	
	686	9	2	t0				1.174	1	2.83				
	687	135		t0				1.194	2	2.89	2.86	0.04		
	688	127		t1			5.04	0.269	1	0.23				
	689	140		t1				NA	2		0.23	#DIV/0!	2.64	
	690	57	3	t0				1.670	1	4.26				
	691	60		t0				1.705	2	4.37	4.32	0.07		
	692	82		t1			5.04	0.523	1	0.96				
	693	40		t1				0.463	2	0.78	0.87	0.12	3.44	
	694	109	4	t0				2.321	1	6.14				
	695	67		t0				2.267	2	5.99	6.06	0.11		
	696	1		t1			5.04	NA	1					
	697	137		t1				1.012	2	2.37	2.37	#DIV/0!	3.70	
	698	50	5	t0				2.272	1	6.00				
	699	157		t0				2.232	2	5.89	5.94	0.08		
	700	74		t1			5.04	1.785	1	4.60				
	701	130		t1				1.244	2	3.04	3.82	1.10	2.13	

Dissolved Oxygen Standards and Blanks

WWMS Event 3
Biological Oxygen Demand
Date of Standardization
5/16/00

Standard

	Tit. Vol. (ml)
Rep 1	8.281
Rep 2	8.338
Rep 3	8.182
Average	8.267
Std Dev	0.079
% Error	0.95%

Blank

	1st Tit. Vol. (ml)	2nd Tit. Vol. (ml)	Blank
Rep 1	2.133	1.963	0.17
Rep 2	2.294	2.095	0.199
Rep 3	2.284	2.099	0.185
Average			0.185
Std Dev			0.015
% Error			7.86%

Standard Factorization

Stand Vol. (ml)	
2	
Approx Titrant Conc.	
0.014	
Stand Factor	
2	
Titrant Vol (STD)	
4.134	

Equation Volume is the actual volume factored to what it would be if 10mls of the standard (0.01M KIO3) were titrated with an approximate 0.14M titrant

Date of Standardization
5/14/00

Total Seston Sample Data Sheet

Sample Date: 5/15/00-
Cruise: Anacstia Wet Weather
Analysis Date: 5/20/00

SAMPLE_ID	REP	STATION	TIME	VOL.	PREFILTER WT (g)	POST FILTER_W 103-105°C (g)	SESTON (g)	CONC. (mg/L)	Ave. SS Conc.	sd SS Conc.	POST FILTER WT 550°C	Uncorrected VSS BLANK	Corrected VSS BLANK	VSS CONC.	Ave. VSS	sd VSS
EB 31	1	field blank	5/15/00 4:34	190	0.1292	0.1299	0.0007	3.6842			0.1277	0.0022	0.0007	3.68	3.231	0.6409
FB 31	1	field blank	5/15/00 4:34	180	0.1286	0.1291	0.0005	2.7778			0.1271	0.0020	0.0005	2.78	3.9603	1.6724
FB 32	1	field blank	5/15/00 16:40	175	0.1233	0.1246	0.0013	7.4286			0.1222	0.0024	0.0009	5.14	8.6117	4.9057
FB 33	1	field blank	5/16/00 4:05	149	0.1251	0.1268	0.0017	11.4094			0.1235	0.0033	0.0018	12.08	8.326	5.3097
FB 34	1	Eqp blank	5/16/00 15:20	175	0.1229	0.1235	0.0006	3.4286			0.1212	0.0023	0.0008	4.57	7.0476	3.5019
SS 300	1	1	5/14/00 23:53	210	0.1260	0.1306	0.0046	21.9048	23.2780	1.9420	0.1271	0.0035	0.0020	9.52	7.55	2.7877
SS 301	2	1	5/14/00 23:53	215	0.1250	0.1303	0.0053	24.6512			0.1276	0.0027	0.0012	5.58		
SS 302	1	2	5/15/00 0:08	220	0.1285	0.1321	0.0036	16.3636	16.9425	0.8186	0.1293	0.0028	0.0013	5.91	5.52	0.5522
SS 303	2	2	5/15/00 0:08	234	0.1250	0.1291	0.0041	17.5214			0.1264	0.0027	0.0012	5.13		
SS 304	1	3	5/15/00 0:19	207	0.1249	0.1295	0.0046	22.2222	21.8533	0.5217	0.1268	0.0027	0.0012	5.80	6.41	0.8727
SS 305	2	3	5/15/00 0:19	256	0.1257	0.1312	0.0055	21.4844			0.1279	0.0033	0.0018	7.03		
SS 306	1	4	5/15/00 0:39	205	0.1248	0.1302	0.0054	26.3415	26.1241	0.3074	0.1271	0.0031	0.0016	7.80	6.75	1.4887
SS 307	2	4	5/15/00 0:39	193	0.1247	0.1297	0.0050	25.9067			0.1271	0.0026	0.0011	5.70		
SS 308	1	5	5/15/00 0:49	214	0.1248	0.1288	0.0040	18.6916	17.6005	1.5430	0.1269	0.0019	0.0004	1.87	3.53	2.3473
SS 309	2	5	5/18/00 0:49	212	0.1249	0.1284	0.0035	16.5094			0.1258	0.0026	0.0011	5.19		
SS 310	1	1	5/18/00 3:43	205	0.1243	0.1306	0.0063	30.7317	29.1679	2.2115	0.1277	0.0029	0.0014	6.83	6.02	1.1462
SS 311	2	1	5/18/00 3:43	192	0.1248	0.1301	0.0053	27.6042			0.1276	0.0025	0.0010	5.21		
SS 312	1	2	5/18/00 3:56	207	0.1249	0.1304	0.0055	26.5700	23.8378	3.8640	0.1272	0.0032	0.0017	8.21	6.12	2.9645
SS 313	2	2	5/18/00 3:56	199	0.1256	0.1298	0.0042	21.1055			0.1275	0.0023	0.0008	4.02		
SS 314	1	3	5/18/00 4:08	220	0.1271	0.1331	0.0060	27.2727	26.5550	1.0150	0.1301	0.0030	0.0015	6.82	6.76	0.0846
SS 315	2	3	5/18/00 4:08	209	0.1236	0.1290	0.0054	25.8373			0.1261	0.0029	0.0014	6.70		
SS 316	1	4	5/18/00 4:23	220	0.1278	0.1321	0.0043	19.5455	20.2489	0.9948	0.1295	0.0026	0.0011	5.00	5.60	0.8418
SS 317	2	4	5/18/00 4:23	210	0.1250	0.1294	0.0044	20.9524			0.1266	0.0028	0.0013	6.19		
SS 318	1	5	5/18/00 4:34	211	0.1250	0.1270	0.0020	9.4787	10.3491	1.2310	0.1249	0.0021	0.0006	2.84	4.10	1.7835
SS 319	2	5	5/18/00 4:34	205	0.1248	0.1271	0.0023	11.2195			0.1245	0.0026	0.0011	5.37		
SS 320	1	1	5/15/00 7:50	220	0.1288	0.1329	0.0041	18.6364	18.0626	0.8115	0.1302	0.0027	0.0012	5.45	5.64	0.2652
SS 321	2	1	5/15/00 7:50	223	0.1274	0.1313	0.0039	17.4888			0.1285	0.0028	0.0013	5.83		
SS 322	1	2	5/15/00 8:01	185	0.1265	0.1290	0.0025	13.5135	13.8590	0.4886	0.1267	0.0023	0.0008	4.32	4.72	0.5581
SS 323	2	2	5/15/00 8:01	176	0.1278	0.1303	0.0025	14.2045			0.1279	0.0024	0.0009	5.11		
SS 324	1	3	5/15/00 8:11	205	0.1285	0.1334	0.0049	23.9024	23.5791	0.4572	0.1304	0.0030	0.0015	7.32	5.98	1.8851
SS 325	2	3	5/15/00 8:11	215	0.1283	0.1333	0.0050	23.2558			0.1308	0.0025	0.0010	4.65		
SS 326	1	4	5/15/00 8:34	230	0.1293	0.1340	0.0047	46.9565	46.0973	1.2151	0.1208	0.0132	0.0117	50.87	28.77	31.2562

SS 327	2	4	5/15/00 8:34	210	0.1282	0.1343	0.0061	45.2381			0.1314	0.0029	0.0014	6.67		
SS 328	1	5	5/15/00 8:40	200	0.1248	0.1282	0.0034	17.0000	15.5093	2.1081	0.1255	0.0027	0.0012	6.00	4.6355	1.9297
SS 329	2	5	5/15/00 8:40	214	0.1245	0.1275	0.0030	14.0187			0.1253	0.0022	0.0007	3.27		
SS 330	1	1	5/15/00 11:36	233	0.1235	0.1283	0.0048	20.6009	20.7171	0.1644	0.1252	0.0031	0.0016	6.87	6.77	0.1416
SS 331	2	1	5/15/00 11:36	240	0.1238	0.1288	0.0050	20.8333			0.1257	0.0031	0.0016	6.67		
SS 332	1	2	5/15/00 11:54	258	0.1241	0.1278	0.0037	14.3411	15.3564	1.4358	0.1251	0.0027	0.0012	4.65	5.64	1.4043
SS 333	2	2	5/15/00 11:54	226	0.1249	0.1286	0.0037	16.3717			0.1256	0.0030	0.0015	6.64		
SS 334	1	3	5/15/00 13:06	224	0.1240	0.1275	0.0035	15.6250	15.9758	0.4961	0.1244	0.0031	0.0016	7.14	6.22	1.2988
SS 335	2	3	5/15/00 13:06	245	0.1254	0.1294	0.0040	16.3265			0.1266	0.0028	0.0013	5.31		
SS 336	1	4	5/15/00 13:25	209	0.1257	0.1296	0.0039	18.6603	19.1079	0.6331	0.1266	0.0030	0.0015	7.18	7.14	0.0466
SS 337	2	4	5/15/00 13:25	225	0.1248	0.1292	0.0044	19.5556			0.1261	0.0031	0.0016	7.11		
SS 338	1	5	5/15/00 13:33	237	0.1261	0.1306	0.0045	18.9873	21.1165	3.0111	0.1277	0.0029	0.0014	5.91	5.59	0.4554
SS 339	2	5	5/15/00 13:33	228	0.1251	0.1304	0.0053	23.2456			0.1277	0.0027	0.0012	5.26		
SS 340	1	1	5/15/00 15:52	212	0.1239	0.1286	0.0047	22.1698	21.5872	0.8240	0.1253	0.0033	0.0018	8.49	8.13	0.5148
SS 341	2	1	5/15/00 15:52	219	0.1224	0.1270	0.0046	21.0046			0.1238	0.0032	0.0017	7.76		
SS 342	1	2	5/15/00 16:02	207	0.1233	0.1283	0.0050	24.1546	25.7358	2.2362	0.1254	0.0029	0.0014	6.76	6.31	0.6432
SS 343	2	2	5/15/00 16:02	205	0.1240	0.1296	0.0056	27.3171			0.1269	0.0027	0.0012	5.85		
SS 344	1	3	5/15/00 16:12	180	0.1243	0.1315	0.0072	40.0000	39.2500	1.0607	0.1277	0.0038	0.0023	12.78	11.64	1.6106
SS 345	2	3	5/15/00 16:12	200	0.1230	0.1307	0.0077	38.5000			0.1271	0.0036	0.0021	10.50		
SS 346	1	4	5/15/00 16:28	197	0.1262	0.1312	0.0050	25.3807	25.6904	0.4379	0.1279	0.0033	0.0018	9.14	8.82	0.4505
SS 347	2	4	5/15/00 16:28	200	0.1249	0.1301	0.0052	26.0000			0.1269	0.0032	0.0017	8.50		
SS 348	1	5	5/15/00 16:40	190	0.1229	0.1255	0.0026	13.6842	14.4776	1.1220	0.1231	0.0024	0.0009	4.74	5.08	0.4822
SS 349	2	5	5/15/00 16:40	203	0.1243	0.1274	0.0031	15.2709			0.1248	0.0026	0.0011	5.42		
SS 350	1	1	5/15/00 19:43	208	0.1247	0.1286	0.0039	18.7500	18.1845	0.7997	0.1258	0.0028	0.0013	6.25	5.27	1.3890
SS 351	2	1	5/15/00 19:43	210	0.1243	0.1280	0.0037	17.6190			0.1256	0.0024	0.0009	4.29		
SS 352	1	2	5/15/00 19:55	200	0.1249	0.1296	0.0047	23.5000	23.9722	0.6678	0.1268	0.0028	0.0013	6.50	5.47	1.4535
SS 353	2	2	5/15/00 19:55	180	0.1240	0.1284	0.0044	24.4444			0.1261	0.0023	0.0008	4.44		
SS 354	1	3	5/15/00 20:05	203	0.1240	0.1317	0.0077	37.9310	39.3737	2.0402	0.1284	0.0033	0.0018	8.87	8.52	0.4976
SS 355	2	3	5/15/00 20:05	196	0.1247	0.1327	0.0080	40.8163			0.1296	0.0031	0.0016	8.16		
SS 356	1	4	5/15/00 20:22	426	0.1251	0.1355	0.0104	24.4131	24.4131	#DIV/0!	0.1312	0.0043	0.0028	6.57	6.57	0.0000
SS 357	2	4	5/15/00 20:22				0.0000	#DIV/0!				0.0000	-0.0015	#DIV/0!		
SS 358	1	5	5/15/00 20:32	204	0.1243	0.1278	0.0035	17.1569	16.9943	0.2299	0.1252	0.0026	0.0011	5.39	3.93	2.0626
SS 359	2	5	5/15/00 20:32	202	0.1228	0.1262	0.0034	16.8317			0.1242	0.0020	0.0005	2.48		
SS 360	1	1	5/15/00 23:34	217	0.1239	0.1311	0.0072	33.1797	28.7286	6.2949	0.1266	0.0045	0.0030	13.82	13.56	0.3748
SS 361	2	1	5/15/00 23:34	173	0.1252	0.1294	0.0042	24.2775			0.1256	0.0038	0.0023	13.29		
SS 362	1	2	5/15/00 23:54	183	0.1245	0.1311	0.0066	36.0656	34.2416	2.5795	0.1267	0.0044	0.0029	15.85	13.42	3.4351
SS 363	2	2	5/15/00 23:54	182	0.1261	0.1320	0.0059	32.4176			0.1285	0.0035	0.0020	10.99		
SS 364	1	3	5/16/00 0:08	202	0.1252	0.1308	0.0056	27.7228	21.4756	8.8348	0.1280	0.0028	0.0013	6.44	5.76	0.9613
SS 365	2	3	5/16/00 0:08	197	0.1262	0.1292	0.0030	15.2284			0.1267	0.0025	0.0010	5.08		

SS 366	1	4	5/16/00 0:17	195	0.1272	0.1335	0.0063	32.3077	32.6563	0.4930	0.1302	0.0033	0.0018	9.23	9.30	0.0911
SS 367	2	4	5/16/00 0:17	203	0.1260	0.1327	0.0067	33.0049			0.1293	0.0034	0.0019	9.36		
SS 368	1	5	5/16/00 0:27	194	0.1250	0.1299	0.0049	25.2577	25.7868	0.7482	0.1265	0.0034	0.0019	9.79	9.11	0.9707
SS 369	2	5	5/16/00 0:27	190	0.1264	0.1314	0.0050	26.3158			0.1283	0.0031	0.0016	8.42		
SS 370	1	1	5/16/00 3:25	160	0.1267	0.1298	0.0031	19.3750	18.8304	0.7702	0.1271	0.0027	0.0012	7.50	6.89	0.8586
SS 371	2	1	5/16/00 3:25	175	0.1259	0.1291	0.0032	18.2857			0.1265	0.0026	0.0011	6.29		
SS 372	1	2	5/16/00 3:38	170	0.1258	0.1291	0.0033	19.4118	18.8725	0.7626	0.1262	0.0029	0.0014	8.24	5.23	4.2519
SS 373	2	2	5/16/00 3:38	180	0.1250	0.1283	0.0033	18.3333			0.1261	0.0022	0.0004	2.22		
SS 374	1	3	5/16/00 3:48	190	0.1256	0.1299	0.0043	22.6316	23.2602	0.8891	0.1275	0.0024	0.0006	3.16	4.91	2.4811
SS 375	2	3	5/16/00 3:48	180	0.1258	0.1301	0.0043	23.8889			0.1271	0.0030	0.0012	6.67		
SS 376	1	4	5/16/00 3:51	204	0.1259	0.1329	0.0070	34.3137	34.9404	0.8862	0.1298	0.0031	0.0013	6.37	7.05	0.9612
SS 377	2	4	5/16/00 3:51	194	0.1254	0.1323	0.0069	35.5670			0.1290	0.0033	0.0015	7.73		
SS 378	1	5	5/16/00 4:05	174	0.1263	0.1303	0.0040	22.9885	21.0988	2.6725	0.1275	0.0028	0.0010	5.75	4.85	1.2674
SS 379	2	5	5/16/00 4:05	177	0.1256	0.1290	0.0034	19.2090			0.1265	0.0025	0.0007	3.95		
SS 380	1	1	5/16/00 7:45	185	0.1253	0.1285	0.0032	17.2973	16.8709	0.6031	0.1264	0.0021	0.0003	1.62	2.14	0.7390
SS 381	2	1	5/16/00 7:45	225	0.1249	0.1286	0.0037	16.4444			0.1262	0.0024	0.0006	2.67		
SS 382	1	2	5/16/00 8:00	185	0.1260	0.1295	0.0035	18.9189	17.7928	1.5926	0.1263	0.0032	0.0014	7.57	6.88	0.9738
SS 383	2	2	5/16/00 8:00	210	0.1253	0.1288	0.0035	16.6667			0.1257	0.0031	0.0013	6.19		
SS 384	1	3	5/16/00 8:10	205	0.1258	0.1307	0.0049	23.9024	25.2846	1.9546	0.1283	0.0024	0.0006	2.93	4.56	2.3077
SS 385	2	3	5/16/00 8:10	210	0.1255	0.1311	0.0056	26.6667			0.1280	0.0031	0.0013	6.19		
SS 386	1	4	5/16/00 8:29	215	0.1252	0.1314	0.0062	28.8372	26.8510	2.8089	0.1283	0.0031	0.0013	6.05	4.92	1.6000
SS 387	2	4	5/16/00 8:29	185	0.1255	0.1301	0.0046	24.8649			0.1276	0.0025	0.0007	3.78		
SS 388	1	5	5/16/00 8:36	195	0.1255	0.1306	0.0051	26.1538	29.0769	4.1339	0.1268	0.0038	0.0020	10.26	6.38	5.4846
SS 389	2	5	5/16/00 8:36	200	0.1241	0.1305	0.0064	32.0000			0.1282	0.0023	0.0005	2.50		
SS 390	1	1	5/16/00 11:30	170	0.1251	0.1274	0.0023	13.5294	13.3437	0.2627	0.1248	0.0026	0.0008	4.71	4.20	0.7224
SS 391	2	1	5/16/00 11:30	190	0.1242	0.1267	0.0025	13.1579			0.1242	0.0025	0.0007	3.68		
SS 392	1	2	5/16/00 11:38	210	0.1245	0.1283	0.0038	18.0952	18.0720	0.0329	0.1253	0.0030	0.0012	5.71	4.81	1.2812
SS 393	2	2	5/16/00 11:38	205	0.1248	0.1285	0.0037	18.0488			0.1259	0.0026	0.0008	3.90		
SS 394	1	3	5/16/00 11:51	220	0.1244	0.1289	0.0045	20.4545	20.4545	0.0000	0.1260	0.0029	0.0011	5.00	5.91	1.2856
SS 395	2	3	5/16/00 11:51	220	0.1249	0.1294	0.0045	20.4545			0.1261	0.0033	0.0015	6.82		
SS 396	1	4	5/16/00 12:13	210	0.1249	0.1303	0.0054	25.7143	25.5238	0.2694	0.1271	0.0032	0.0014	6.67	6.00	0.9428
SS 397	2	4	5/16/00 12:13	225	0.1248	0.1305	0.0057	25.3333			0.1275	0.0030	0.0012	5.33		
SS 398	1	5	5/16/00 12:25	205	0.1239	0.1288	0.0049	23.9024	19.0941	6.8001	0.1261	0.0027	0.0009	4.39	5.53	1.6097
SS 399	2	5	5/16/00 12:25	210	0.1251	0.1281	0.0030	14.2857			0.1249	0.0032	0.0014	6.67		
SS 3100	1	1	5/16/00 15:26	230	0.1226	0.1255	0.0029	12.6087	12.8498	0.3410	0.1221	0.0034	0.0016	6.96	6.75	0.2907
SS 3101	2	1	5/16/00 15:26	275	0.1239	0.1275	0.0036	13.0909			0.1239	0.0036	0.0018	6.55		
SS 3102	1	2	5/16/00 15:40	200	0.1244	0.1302	0.0058	29.0000	29.8659	1.2245	0.1268	0.0034	0.0016	8.00	7.41	0.8278
SS 3103	2	2	5/16/00 15:40	205	0.1239	0.1302	0.0063	30.7317			0.1270	0.0032	0.0014	6.83		
SS 3104	1	3	5/16/00 15:50	190	0.1233	0.1287	0.0054	28.4211	28.4605	0.0558	0.1260	0.0027	0.0009	4.74	6.37	2.3074

SS 3105	2	3	5/16/00 15:50	200	0.1237	0.1294	0.0057	28.5000			0.1260	0.0034	0.0016	8.00		
SS 3106	1	4	5/16/200016:1	205	0.1237	0.1275	0.0038	18.5366	18.8238	0.4063	0.1253	0.0022	0.0004	1.95	3.20	1.7630
SS 3107	2	4	5/16/200016:1	225	0.1221	0.1264	0.0043	19.1111			0.1236	0.0028	0.0010	4.44		
SS 3108	1	5	5/16/00 16:20	200	0.1245	0.1283	0.0038	19.0000	19.2619	0.3704	0.1255	0.0028	0.0010	5.00	5.36	0.5051
SS 3109	2	5	5/16/00 16:20	210	0.1248	0.1289	0.0041	19.5238			0.1259	0.0030	0.0012	5.71		
SS 3110	1	1	5/16/00 19:45	205	0.1232	0.1266	0.0034	16.5854	17.0427	0.6467	0.1241	0.0025	0.0007	3.41	4.96	2.1817
SS 3111	2	1	5/16/00 19:45	200	0.1243	0.1278	0.0035	17.5000			0.1247	0.0031	0.0013	6.5		
SS 3112	1	2	5/16/00 19:55	185	0.1234	0.1276	0.0042	22.7027	26.9924	6.0665	0.1247	0.0029	0.0011	5.945946	6.3063	0.5096
SS 3113	2	2	5/16/00 19:55	195	0.1212	0.1273	0.0061	31.2821			0.1242	0.0031	0.0013	6.666667		
SS 3114	1	3	5/16/00 20:05	205	0.1239	0.1314	0.0075	36.5854	35.1974	1.9628	0.128	0.0034	0.0016	7.804878	7.712	0.1314
SS 3115	2	3	5/16/00 20:05	210	0.1228	0.1299	0.0071	33.8095			0.1265	0.0034	0.0016	7.619048		
SS 3116	1	4	5/16/00 20:25	215	0.1233	0.1283	0.005	23.2558	23.6279	0.5262	0.1253	0.003	0.0012	5.581395	5.5407	0.0576
SS 3117	2	4	5/16/00 20:25	200	0.1242	0.1290	0.0048	24.0000			0.1261	0.0029	0.0011	5.5		
SS 3118	1	5	5/16/00 20:40	215	0.1285	0.1325	0.004	18.6047	19.0642	0.6499	0.1298	0.0027	0.0009	4.186047	3.9978	0.2662
SS 3119	2	5	5/16/00 20:40	210	0.1279	0.1320	0.0041	19.5238			0.1294	0.0026	0.0008	3.809524		

Total Seston Blank Data Sheet

Sample Date: 5/15/00- 5/16/00

Cruise: Anacstia Wet Weather

Analysis Date: 5/20/00

	Pre-Ignition-Blank	Post-Ignition Blank	
SAMPLE	WT (g)	WT (g)	Difference
B1	0.1257	0.1238	0.0019
B2	0.1255	0.1237	0.0018
B3	0.1260	0.1242	0.0018

0.0018	Avg.
5.774E-05	StdDev

TON Event 3
Peak Table: Nitrate+Nitrite
File name: A:\E3&3TON.TXT
Date: September 21, 2000
Operator: MITCH

Cup	Name	Type	Height	Calc. (mg/L)
3	Sync	SYNC	1116937	1.860517
0	Carryover	CO	354	-0.000328
0	Carryover	CO	108	-0.000738
0	Baseline	RB	0	-0.000918
0	Cal 0	C	-63	-0.001023
1	Cal 1	C	96603	0.160077
2	Cal 2	C	738822	1.230369
3	Cal 3	C	1203979	2.005578
0	BLANK	BLNK	-224	-0.001292
0	BLANK	BLNK	-163	-0.001189
4	ICV	ICV	873552	1.454902
0	READ B/L	RB	0	-0.000918
8	NO2 1.5	U	873714	1.455173
9	NO3 1.5	U	843556	1.404913
10	N301	U	332939	0.553943
11	N303	U	300319	0.49958
12	N305	U	278663	0.463489
13	N307	U	300742	0.500285
14	N309	U	395945	0.658946
15	N311	U	320932	0.533933
16	N313	U	280933	0.467272
17	N315	U	310387	0.516358
18	N317	U	384196	0.639365
19	N319	U	431824	0.718739
0	BLANK	BLNK	-153	-0.001173
0	BLANK	BLNK	-77	-0.001046
5	CCV	CCV	769074	1.280786
0	READ B/L	RB	0	-0.000918
20	N318 DUP	U	418547	0.696612
21	N321	U	286745	0.476957
22	N323	U	266816	0.443745
23	N325	U	300028	0.499095
24	N327	U	325169	0.540994
25	N329	U	420195	0.699359
26	N331	U	268489	0.446534
27	N333	U	304587	0.506692
28	N335	U	304021	0.50575
29	N337	U	309795	0.515371
0	BLANK	BLNK	-218	-0.001281
0	BLANK	BLNK	-137	-0.001146
5	CCV	CCV	730903	1.217171
0	READ B/L	RB	0	-0.000918

30	N338	U	383144	0.637612
31	N336 DUP	U	389869	0.648819
32	N341	U	285070	0.474165
33	N343	U	290095	0.482541
34	N345	U	297013	0.49407
35	N347	U	337991	0.562362
36	N349	U	427462	0.71147
37	N351	U	305438	0.50811
38	N353	U	267218	0.444415
39	N355	U	291565	0.48499
0	BLANK	BLNK	-199	-0.00125
0	BLANK	BLNK	-264	-0.001359
6	CCV	CCV	738871	1.23045
0	READ B/L	RB	0	-0.000918
40	N357	U	349901	0.58221
41	N359	U	436954	0.72729
42	N358 DUP	U	406993	0.677358
43	N361	U	326618	0.543407
44	N363	U	278441	0.463119
45	N365	U	263137	0.437614
46	N367	U	287805	0.478724
47	N369	U	375821	0.625407
48	N371	U	292039	0.485781
49	N373	U	271772	0.452005
0	BLANK	BLNK	-1	-0.00092
0	BLANK	BLNK	-19	-0.00095
6	CCV	CCV	742796	1.236991
0	READ B/L	RB	0	-0.000918
50	N375	U	256989	0.427368
51	N377	U	355165	0.590984
52	N379	U	393433	0.654758
53	N378 DUP	U	392092	0.652525
54	N381	U	276655	0.460142
55	N383	U	257220	0.427752
56	N385	U	318807	0.53039
57	N387	U	356864	0.593815
58	N389	U	404412	0.673056
59	N391	U	317163	0.527652
0	BLANK	BLNK	-171	-0.001203
0	BLANK	BLNK	-135	-0.001143
7	CCV	CCV	750322	1.249533
0	READ B/L	RB	0	-0.000918
60	N393	U	262553	0.43664
61	N395	U	254265	0.422828
62	N397	U	328588	0.546692
63	N399	U	390255	0.649463
64	N398 DUP	U	370836	0.6171
65	N3101	U	335031	0.557429
66	N3103	U	257648	0.428467

67	N3105	U	246225	0.40943
68	N3107	U	345612	0.575063
69	N3109	U	384621	0.640074
0	BLANK	BLNK	-189	-0.001233
0	BLANK	BLNK	-182	-0.001222
7	CCV	CCV	742434	1.236389
0	READ B/L	RB	0	-0.000918
70	N3111	U	384615	0.640064
71	N3113	U	281691	0.468535
72	N3114	U	283804	0.472057
73	N3117	U	387723	0.645242
74	N3116 DU	U	359409	0.598056
75	N3118	U	308871	0.513833

Orthophosphate Event 3
Peak Table: Ortho-Phosphate
File name: A:\E3&4OP.TXT
Date: September 21, 2000
Operator: MITCH

Cup	Name	Type	Height	Calc. (mg/L)
3	Sync	SYNC	298576	2.015616
0	Carryover	CO	87	0.00546
0	Carryover	CO	27	0.005056
0	Baseline	RB	0	0.004874
0	Cal 0	C	-41	0.004598
1	Cal 1	C	21497	0.149648
2	Cal 2	C	181633	1.228068
3	Cal 3	C	297417	2.007813
0	BLANK	BLNK	-42	0.004594
0	BLANK	BLNK	-43	0.004582
4	ICV	ICV	200717	1.356593
0	READ B/L	RB	0	0.004874
8	NO2 1.5	U	-167	0.003752
9	NO3 1.5	U	-85	0.004299
10	N301	U	314	0.006992
11	N303	U	337	0.007145
12	N305	U	283	0.006781
13	N307	U	94	0.005505
14	N309	U	171	0.006025
15	N311	U	349	0.007225
16	N313	U	336	0.007136
17	N315	U	281	0.006767
18	N317	U	159	0.005945
19	N319	U	1734	0.016553
0	BLANK	BLNK	-69	0.004406
0	BLANK	BLNK	-73	0.004379
5	CCV	CCV	185740	1.255729
0	READ B/L	RB	0	0.004874
20	N318 DUP	U	1675	0.016155
21	N321	U	354	0.007261
22	N323	U	397	0.007547
23	N325	U	197	0.006201
24	N327	U	275	0.006728
25	N329	U	1124	0.012443
26	N331	U	316	0.007002
27	N333	U	380	0.007436
28	N335	U	291	0.006832
29	N337	U	120	0.00568
0	BLANK	BLNK	-84	0.00431
0	BLANK	BLNK	-89	0.004273
5	CCV	CCV	182850	1.236267
0	READ B/L	RB	0	0.004874

30	N338	U	366	0.007341
31	N336 DUP	U	370	0.007367
32	N341	U	205	0.006256
33	N343	U	324	0.007056
34	N345	U	182	0.006097
35	N347	U	261	0.00663
36	N349	U	841	0.010538
37	N351	U	318	0.007017
38	N353	U	378	0.007419
39	N355	U	219	0.006351

Cup	Name	Type	Height	Calc. (mg/L)
0	BLANK	BLNK	-61	0.004463
0	BLANK	BLNK	-51	0.00453
6	CCV	CCV	182689	1.235182
0	READ B/L	RB	0	0.004874
40	N357	U	286	0.006801
41	N359	U	881	0.010804
42	N358 DUP	U	726	0.009778
43	N361	U	228	0.006407
44	N363	U	391	0.007509
45	N365	U	241	0.006498
46	N367	U	229	0.006418
47	N369	U	1117	0.012396
48	N371	U	303	0.006913
49	N373	U	277	0.006741
0	BLANK	BLNK	-69	0.004407
0	BLANK	BLNK	-60	0.00447
6	CCV	CCV	180789	1.222389
0	READ B/L	RB	0	0.004874
50	N375	U	369	0.007358
51	N377	U	292	0.006839
52	N379	U	397	0.007551
53	N378 DUP	U	401	0.007574
54	N381	U	300	0.006898
55	N383	U	148	0.005873
56	N385	U	230	0.006425
57	N387	U	138	0.005806
58	N389	U	767	0.010039
59	N391	U	463	0.007995
0	BLANK	BLNK	-57	0.004493
0	BLANK	BLNK	-65	0.004439
7	CCV	CCV	184873	1.249891
0	READ B/L	RB	0	0.004874
60	N393	U	274	0.00672
61	N395	U	170	0.006021
62	N397	U	144	0.005843
63	N399	U	129	0.005743
64	N398 DUP	U	178	0.006071

65	N3101	U	353	0.007249
66	N3103	U	403	0.007586
67	N3105	U	179	0.00608
68	N3107	U	68	0.005334
69	N3109	U	21	0.005015
0	BLANK	BLNK	-122	0.004052
0	BLANK	BLNK	-119	0.004071
7	CCV	CCV	185926	1.256978
0	READ B/L	RB	0	0.004874
70	N3111	U	356	0.007274
71	N3113	U	196	0.006194
72	N3114	U	188	0.006137
73	N3117	U	529	0.008435
74	N3116 DU	U	100	0.005549
75	N3118	U	596	0.008889
76	N401	U	1417	0.014414
77	N403	U	1144	0.012578
78	N405	U	518	0.008362
79	N407	U	820	0.010397
0	BLANK	BLNK	-60	0.00447

Cup	Name	Type	Height	Calc. (mg/L)
0	BLANK	BLNK	-65	0.004434
5	CCV	CCV	182427	1.233416
0	READ B/L	RB	0	0.004874
80	N409	U	3596	0.029092
81	N411	U	708	0.00964
82	N413	U	695	0.009557
83	N415	U	976	0.011447
84	N417	U	806	0.010302
85	N419	U	585	0.008814
86	N420 DUP	U	618	0.009035
87	N421	U	1015	0.011709
88	N423	U	463	0.007995
89	N425	U	764	0.010019
0	BLANK	BLNK	-73	0.00438
0	BLANK	BLNK	-87	0.004291
5	CCV	CCV	184681	1.248595
0	READ B/L	RB	0	0.004874
90	N427	U	790	0.010195
91	N429	U	531	0.008451
92	N431	U	562	0.008657
93	N433	U	758	0.009982
94	N435	U	573	0.008732
95	N437	U	529	0.008434
96	N439	U	1675	0.016154
97	N440 DUP	U	1773	0.016812
98	N441	U	708	0.009642
99	N443	U	629	0.009109

0	BLANK	BLNK	-82	0.004323
0	BLANK	BLNK	-91	0.004264
6	CCV	CCV	182453	1.233594
0	READ B/L	RB	0	0.004874
100	N445	U	613	0.008999
101	N447	U	572	0.008729
102	N449	U	706	0.009627
103	N451	U	448	0.00789
104	N453	U	568	0.008696
105	N455	U	593	0.008871
106	N457	U	509	0.008299
107	N459	U	423	0.007722
108	N460 DUP	U	483	0.008125
109	N461	U	792	0.010206
0	BLANK	BLNK	-77	0.004354
0	BLANK	BLNK	-73	0.004382
6	CCV	CCV	182405	1.233268
0	READ B/L	RB	0	0.004874
110	N463	U	688	0.009506
111	N465	U	598	0.008901
112	N467	U	691	0.009525
113	N469	U	1720	0.016458
114	N471	U	577	0.008757
115	N473	U	831	0.010471
116	N475	U	993	0.011562
117	N477	U	765	0.010024
118	N479	U	2797	0.023708
119	N480 DUP	U	2897	0.024383
0	BLANK	BLNK	-37	0.004626
0	BLANK	BLNK	-48	0.00455

Cup	Name	Type	Height	Calc. (mg/L)
7	CCV	CCV	182695	1.23522
0	READ B/L	RB	0	0.004874
120	N481	U	963	0.011362
8	N483	U	827	0.010443
9	N485	U	789	0.010191
10	N487	U	910	0.011
11	N489	U	785	0.01016
12	N491	U	948	0.01126
13	N493	U	794	0.01022
14	N495	U	907	0.010984
15	N497	U	918	0.011058
16	N499	U	2664	0.022818
0	BLANK	BLNK	-58	0.004482
0	BLANK	BLNK	-62	0.004455
7	CCV	CCV	182570	1.234383
0	READ B/L	RB	0	0.004874
17	N4100 DU	U	2510	0.021777

18	N4101	U	687	0.009502
19	N4103	U	1237	0.013204
20	N4105	U	1003	0.011626
21	N4107	U	1006	0.011651
22	N4109	U	1681	0.016192
23	N4111	U	645	0.009221
24	N4113	U	964	0.011368
25	N4115	U	837	0.010513
26	N4117	U	914	0.011027
0	BLANK	BLNK	-36	0.00463
0	BLANK	BLNK	-47	0.004558
5	CCV	CCV	182194	1.231851
0	READ B/L	RB	0	0.004874
27	N4119	U	1131	0.012491
28	N4120 DU	U	1140	0.012553
29	2FB07	U	156	0.005923
30	NFB4	U	61	0.005286
31	FIELD BL	U	-62	0.004458
33	FB2N	U	-28	0.004684
33	FB2N	U	1233883	8.31438
34	N4FB2	U	-355	0.002485
35	N4FB4	U	-9	0.004815
36	4EB N	U	-63	0.004448
0	BLANK	BLNK	-107	0.004151
0	BLANK	BLNK	-114	0.004106
5	CCV	CCV	183070	1.237751

TOTAL PHOSPHATE EVENT #3

Run Results Report
Results: C:\FLOW_4\SAMPLE~1\EVNT3&4T.RST
Results completed: 17:37 September 27, 2000.
Operator: MITCH

		TOTAL PHOSPHATE			
Time	Cup	Name	Height	Calc.	Flags	
10:49	0	Carryover	117.5134	0.036161		
10:51	0	Carryover	30.09072	0.034256		
10:53	0	Baseline	9.54E-07	0.033601	BL	
10:55	0	Cal 0	-28.85477	0.032972		
10:57	1	Cal 1	4529.948	0.132286		
10:59	2	Cal 2	49866.76	1.119951		
11:01	3	Cal 3	93761.02	2.076191		
11:03	0	BLANK	-37.9249	0.032774		
11:05	0	BLANK	-20.16455	0.032987		
11:07	4	ICV	65765.34	1.466303		2.25%
11:09	0	READ B/L	0	0.033601	BL	
11:11	8	P301	2456.046	0.087106		
11:13	9	P303	1221.165	0.060204		
11:15	10	P305	271.2086	0.039509		
11:17	11	P307	128.8272	0.036407		
11:19	12	P309	234.2635	0.038704		
11:21	13	P311	371.8098	0.0417		
11:23	14	P313	340.3114	0.041014		
11:25	15	P315	17.09321	0.033973		
11:27	16	P317	-5.740674	0.033475		
11:29	17	P319	370.2341	0.041666		
11:31	18	P318 DUP	284.8999	0.039807		
11:33	19	P321	438.2025	0.043147		
11:35	0	BLANK	-95.87823	0.031512		
11:37	0	BLANK	-73.51717	0.031999		
11:39	5	CCV	50625.3	1.136476		8.35%
11:41	0	READ B/L	0	0.033601	BL	
11:43	20	P323	276.8031	0.039631		
11:45	21	P325	208.5073	0.038143		
11:47	22	P327	181.9379	0.037564		
11:49	23	P329	220.4557	0.038403		
11:51	24	P331	231.7708	0.03865		
11:53	25	P333	579.5473	0.046226		
11:55	26	P335	313.2401	0.040424		
11:57	27	P337	119.3989	0.036202		
11:59	28	P338	79.80352	0.035339		
12:01	29	P336 DUP	90.44772	0.035571		
12:03	0	BLANK	-104.0009	0.031335		
12:05	0	BLANK	-79.07561	0.031878		

12:07	5	CCV	50451.3	1.132686	8.65%
12:09	0	READ B/L	0	0.033601 BL	
12:11	30	P341	576.2166	0.046153	
12:13	31	P343	241.8178	0.038869	
12:15	32	P345	305.0798	0.040247	
12:17	33	P347	63.25875	0.034979	
12:19	34	P349	107.0491	0.035933	
12:21	35	P351	492.3372	0.044326	
12:23	36	P353	423.6014	0.042829	
12:25	37	P361	283.8329	0.039784	
12:27	38	P363	447.2306	0.043343	
12:29	39	P365	253.1919	0.039116	
12:31	0	BLANK	-110.2839	0.031198	
12:33	0	BLANK	-129.4524	0.03078	
12:35	6	CCV	50057.5	1.124107	9.35%
12:37	0	READ B/L	0	0.033601 BL	
12:39	40	P367	152.7287	0.036928	
12:41	41	P369	435.0493	0.043078	
12:45	43	P373	248.6199	0.039017	
12:47	44	P375	248.9694	0.039024	
12:49	45	P377	106.0871	0.035912	
12:51	46	P379	81.56	0.035377	
12:53	47	P378 DUP	76.99404	0.035278	
12:55	48	P381	401.6059	0.04235	
12:57	49	P383	235.5673	0.038732	
12:59	50	P385	126.74	0.036362	
13:01	0	BLANK	-109.4656	0.031216	
13:03	0	BLANK	-100.5549	0.03141	
13:05	6	CCV	49859.56	1.119794	9.69%
13:07	0	READ B/L	0	0.033601 BL	
13:09	51	P387	163.8474	0.03717	
13:11	52	P389	197.1716	0.037896	
13:13	53	P391	385.9357	0.042008	
13:15	54	P393	413.0293	0.042598	
13:17	55	P395	283.7571	0.039782	
13:19	56	P397	158.5874	0.037055	
13:21	57	P399	100.6967	0.035794	
13:23	58	P398 DUP	108.5834	0.035966	
13:25	59	P3101	191.7381	0.037778	
13:27	60	P3103	438.8887	0.043162	
13:29	0	BLANK	-79.46546	0.031869	
13:31	0	BLANK	-82.87263	0.031795	
13:33	7	CCV	48388.59	1.087749	12.28%
13:35	0	READ B/L	0	0.033601 BL	
13:37	61	P3105	456.5811	0.043547	
13:39	62	P3107	150.6335	0.036882	
13:41	63	P3109	140.1974	0.036655	
13:43	64	P3111	71.88176	0.035166	
13:45	65	P3113	5605.109	0.155708	

13:47	66	P3117	250.5586	0.039059		
13:49	67	P335A	221.6983	0.03843		
13:51	68	P337A	135.2149	0.036546		
13:53	69	P338A	134.5495	0.036532		
13:55	70	P339?	286.0331	0.039832		
13:57	0	BLANK	-74.45621	0.031978		
13:59	0	BLANK	-79.4896	0.031869		
14:01	7	CCV	48701.24	1.09456		11.73%
14:03	0	READ B/L	0	0.033601	BL	
14:05	71	P401	504.2769	0.044586		
14:07	72	P403	561.2398	0.045827		
14:09	73	P405	281.5039	0.039733		
14:11	74	P407	296.4945	0.04006		
14:13	75	P409	563.4821	0.045876		
14:15	76	P411	490.7671	0.044292		
14:17	77	P413	581.8311	0.046276		
14:19	78	P415	887.4066	0.052933		
14:21	79	P417	911.8569	0.053465		
14:23	80	P419	421.5289	0.042784		
14:25	0	BLANK	-71.67226	0.032039		
14:27	0	BLANK	-75.29776	0.03196		
14:29	5	CCV	49149.19	1.104319		10.94%
14:31	0	READ B/L	0	0.033601	BL	
14:33	81	P420 DUP	257.4241	0.039209		
14:35	82	P421	430.4792	0.042979		
14:37	83	P423	381.3797	0.041909		
14:39	84	P425	850.622	0.052131		
14:41	85	P427	392.1973	0.042145		
14:43	86	P429	359.2103	0.041426		
14:45	87	P431	397.5572	0.042261		
14:47	88	P433	394.8846	0.042203		
14:49	89	P435	285.0978	0.039811		
14:51	90	P437	350.0438	0.041226		
14:53	0	BLANK	-94.85484	0.031534		
14:55	0	BLANK	-89.9453	0.031641		
14:57	5	CCV	48809.59	1.096921		11.54%
14:59	0	READ B/L	0	0.033601	BL	
15:01	91	P439	1047.4	0.056418		
15:03	92	P440 DUP	344.355	0.041102		
15:05	93	P441	293.0251	0.039984		
15:07	94	P444	524.4125	0.045025		
15:09	95	P447	276.6354	0.039627		
15:11	96	P449	225.6791	0.038517		
15:13	97	P451	302.0753	0.040181		
15:15	98	P453	381.2453	0.041906		
15:17	99	P455	337.5685	0.040954		
15:19	100	P457	245.3196	0.038945		
15:21	0	BLANK	-61.54259	0.03226		
15:23	0	BLANK	-59.31462	0.032308		

15:25	6	CCV	48362.2	1.087174	12.32%
15:27	0	READ B/L	0	0.033601 BL	
15:29	101	P459	178.8879	0.037498	
15:31	102	P460 DUP	171.392	0.037334	
15:33	103	P459A	370.1199	0.041664	
15:35	104	P461	550.4463	0.045592	
15:37	105	P463	403.412	0.042389	
15:39	106	P465	458.8177	0.043596	
15:41	107	P467	360.7261	0.041459	
15:43	108	P469	1013.578	0.055681	
15:45	109	P471	357.7655	0.041394	
15:47	110	P473	493.2848	0.044347	
15:49	0	BLANK	-52.35488	0.03246	
15:51	0	BLANK	-63.92909	0.032208	
15:53	6	CCV	50636.97	1.13673	8.33%
15:55	0	READ B/L	0	0.033601 BL	
15:57	111	P475	530.9986	0.045168	
15:59	112	P477	340.5146	0.041019	
16:01	113	P479	570.2651	0.046024	
16:03	114	P480 DUP	457.5507	0.043568	
16:05	115	P481	511.0907	0.044735	
16:07	116	P483	714.6365	0.049169	
16:09	117	P485	530.3252	0.045154	
16:11	118	P487	329.4027	0.040777	
16:13	119	P489	744.8913	0.049828	
16:15	120	P491	435.7654	0.043094	
16:17	0	BLANK	-67.22887	0.032136	
16:19	0	BLANK	-81.39078	0.031827	
16:21	7	CCV	47400.1	1.066215	14.01%
16:23	0	READ B/L	0	0.033601 BL	
16:25	8	P493	1031.243	0.056066	
16:27	9	P495	409.0619	0.042512	
16:29	10	P497	381.8976	0.04192	
16:31	11	P499	520.6949	0.044944	
16:33	12	P4100 DUP	540.2392	0.04537	
16:35	13	P4101	473.2649	0.043911	
16:37	14	P4103	898.8107	0.053181	
16:39	15	P4105	633.2686	0.047396	
16:41	16	P4107	1127.565	0.058165	
16:43	17	P4109	467.7127	0.04379	
16:45	0	BLANK	-96.81519	0.031491	
16:47	0	BLANK	-94.69054	0.031538	
16:49	7	CCV	47000.07	1.0575	14.72%
16:51	0	READ B/L	0	0.033601 BL	
16:53	18	P4111	4024.415	0.121273	
16:55	19	P4113	5129.975	0.145357	
16:57	20	P4115	7174.279	0.189893	
16:59	21	P4117	6999.58	0.186087	
17:01	22	P4119	604.6129	0.046772	

17:03	23	P4120 DUP	430.4253	0.042977		
17:05	24	P4FB4	222.6709	0.038451		
17:07	25	P4EB	969.5777	0.054723		
17:09	26	P4FB2	598.0234	0.046629		
17:11	27	P4FB34	15.57699	0.03394		
17:13	0	BLANK	-75.26006	0.031961		
17:15	0	BLANK	-79.90494	0.03186		
17:17	5	CCV	45013.1	1.014214		18.21%
17:19	0	READ B/L	0	0.033601	BL	
17:21	28	PFB31	61.46933	0.03494		
17:23	29	PFB32	36.12216	0.034387		
17:25	30	PEB31	174.5417	0.037403		
17:27	31	PFB33	40.65959	0.034486		
17:29	0	BLANK	-81.01946	0.031836		
17:31	0	BLANK	-76.39598	0.031936		
17:33	5	CCV	44581.98	1.004822		18.97%

Organics

Event 3

					Dissolved			Total			Particulate			Percent Carbon		
Sample ID	Rep	Cycle	Station	Time Collected	mgC/L	average	stdev	mgC/L	average	stdev	mgC/L	average	stdev	%	average	stdev
	1	2	Eqp blank		0.00	NA	NA	0.00	NA	NA				0.4		
	1	2	Field blank		0.17	NA	NA	0.57	NA	NA						
	2	5	Field blank			NA	NA	0.04	NA	NA						
	3	8	Field blank		0.00	NA	NA	0.00	NA	NA				3.1		
	4	11	Field blank		0.28	NA	NA		NA	NA						
301		1	1	5/14/00 23:53	6.54	6.41	0.18	7.14	6.93	0.29						
302		1	1	5/15/00 0:08	6.29		1.07	6.73								
303		1	2	5/15/00 0:08	7.80	7.80		9.22	9.22							
		1	2													
305		1	3	5/15/00 0:19	6.49	6.49		7.76	7.76							
		1	3													
307		1	4	5/15/00 0:39	4.52	4.52		5.79	5.79							
		1	4													
309		1	5	5/15/00 0:49	3.35	3.35		4.23	4.23							
		1	5													
311		2	1	5/15/00 3:43	7.36	7.36		8.29	8.29							
		2	1													
314		2	2	5/15/00 3:56	6.01	6.01		7.56	7.56							
		2	2													
315		2	3	5/15/00 4:08	4.96	4.96		5.70	5.70							
		2	3													
317		2	4	5/15/00 4:23	3.58	3.58		4.35	4.35							
		2	4													
319		2	5	5/15/00 4:34	2.65	2.65		2.97	2.97							
		2	5													
321		3	1	5/15/00 7:50	7.17	7.14	0.05	6.97	7.07	0.13						
322		3	1	5/15/00 7:50	7.11			7.16								
323		3	2	5/15/00 8:01	6.21	6.21		7.25	7.25							
		3	2													

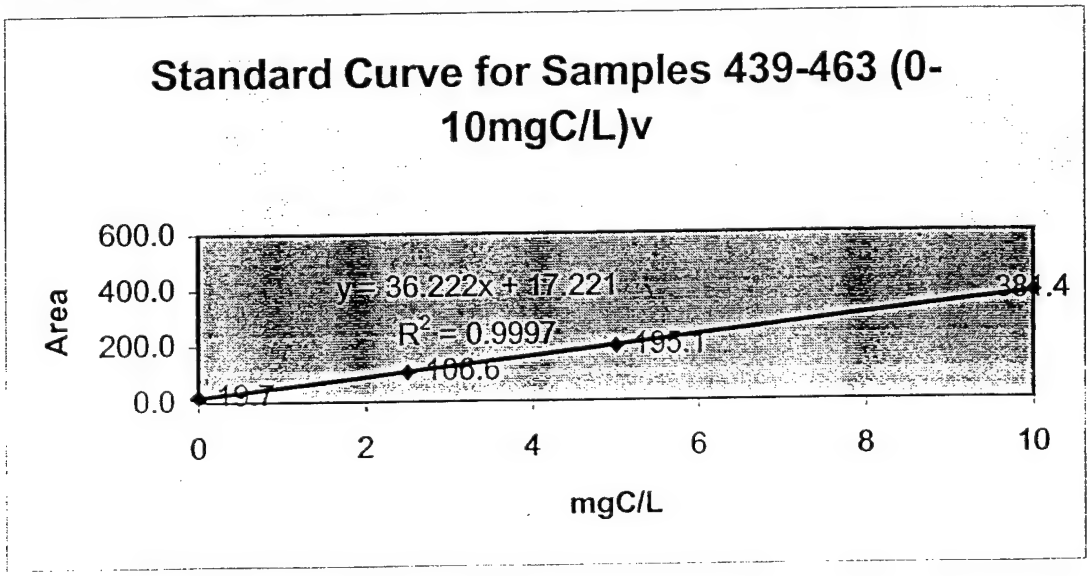
325		3	3	5/15/00 8:11	4.54	4.54		4.91	4.91							
		3	3													
327		3	4	5/15/00 8:34	3.63	3.63		3.59	3.59							
		3	4													
329		3	5	5/15/00 8:40	2.86	2.86		6.99	6.99							
		3	5													
332		4	1	5/15/00 11:36	**5.84**	5.84		8.30	8.30							
		4	1													
333		4	2	5/15/00 11:54	**7.59**	7.59		7.17	7.17							
		4	2													
335		4	3	5/15/00 12:06	**6.35**	6.35		5.78	5.78							
		4	3													
337		4	4	5/15/00 12:25	**4.71**	4.71		4.09	4.09							
		4	4													
340		4	5	5/15/00 12:33	**3.33**	3.33		7.53	7.53							
		4	5													
341		5	1	5/15/00 15:52	7.02	6.73	0.41	7.95	7.80	0.22						
342		5	1	5/15/00 15:52	6.44		0.28	7.64								
343		5	2	5/15/00 16:02	6.84	6.84		12.05	12.05							
		5	2													
346		5	3	5/15/00 16:12	6.75	6.75		8.08	8.08							
		5	3													
347		5	4	5/15/00 16:28	3.62	3.62		5.13	5.13							
		5	4													
349		5	5	5/15/00 16:30	2.92	2.92		4.93	4.93							
		5	5													
351		6	1	5/15/00 19:43	**5.99**	6.07	0.12	8.59	8.15	0.62						
352		6	1	5/15/00 19:43	**6.16**			7.71								
353		6	2	5/15/00 19:55	**5.76**	5.76		7.03	7.03							
		6	2													
355		6	3	5/15/00 20:05	**4.23**	4.23		5.27	5.27							
		6	3													
357		6	4	5/15/00 20:22	**3.48**	3.48		4.11	4.11							
		6	4													
359		6	5	5/15/00 20:32	**3.06**	2.88	0.25	3.27	3.27	0.00						

360		6	5	5/15/00 20:32	**2.71**			3.27								
361		7	1	5/15/00 23:34				7.28	7.28							
		7	1													
364		7	2	5/15/00 23:54	6.43	6.43		7.67	7.67							
		7	2													
366		7	3	5/16/00 0:08	7.49	7.49		7.24	7.24							
		7	3													
368		7	4	5/16/00 0:17	5.03	5.03		6.13	6.13							
		7	4													
		7	5													
371		8	1	5/16/00 3:25	6.21	6.21		7.24	7.14	0.15						
372		8	1	5/16/00 3:25				7.03		0.33						
373		**8**	**2**	5/16/00 3:38	**6.83**	**6.83**		7.50	**7.50**							
		8	2													
375		8	3	5/16/00 3:48	5.75	**5.75**		6.49	**6.49**							
		8	3													
377		8	4	5/16/00 3:50	4.09	4.09		4.78	4.78							
		8	4													
379		8	5	5/16/00 4:05	3.27	3.27		3.79	3.79							
		8	5													
381		9	1	5/16/00 7:45	**3.04**	3.04		3.34	3.34							
		9	1													
383		9	2	5/16/00 8:00	**6.53**	6.53		7.01	7.01							
		9	2													
385		9	3	5/16/00 8:10	**6.11**	6.11		6.80	6.80							
		9	3													
387		9	4	5/16/00 8:29	**4.29**	4.29		5.03	5.03							
		9	4													
389		9	5	5/16/00 8:36	**3.82**	3.82		4.25	4.25							
		9	5													
391		10	1	5/16/00 11:30	6.88	6.60	0.40	7.20	7.05	0.21						
392		10	1	5/16/00 11:30	6.31			6.90								
393		10	2	5/16/00 11:38	6.79	6.79		7.49	7.49							
		10	2													

395		10	3	5/16/00 11:51	5.96	5.96		7.21	7.21							
		10	3													
397		10	4	5/16/00 12:13	4.18	4.18		5.73	5.73							
		10	4													
399		10	5	5/16/00 12:25	3.25	3.25		3.74	3.74							
		10	5													
3101		11	1	5/16/00 15:26	**6.48**	6.51	0.04	7.66	7.77	0.15						
3102		11	1	5/16/00 15:40	**6.54**			7.87								
3103		11	2	5/16/00 15:50	**6.64**	6.64		7.66	7.66							
		11	2													
3105		11	3	5/16/00 15:55	**5.63**	5.63		6.99	6.99							
		11	3													
3107		11	4	5/16/00 16:10	**3.81**	3.81		6.80	6.80							
		11	4													
3110		11	5	5/16/00 16:20	**4.42**	4.42		4.77	4.77							
		11	5													
3111		12	1	5/16/00 19:45	**6.17**	6.17		7.37	7.37							
		12	1													
3113		12	2	5/16/00 19:55	**5.83**	5.83		7.06	7.06							
		12	2													
3115		12	3	5/16/00 20:05	**4.71**	4.71		6.02	6.02							
		12	3													
3117		12	4	5/16/00 20:25	**3.82**	3.82		4.42	4.42							
		12	4													
3119		12	5	5/16/00 20:40	**3.28**	3.28		3.33	3.33							

TOC Sample Data

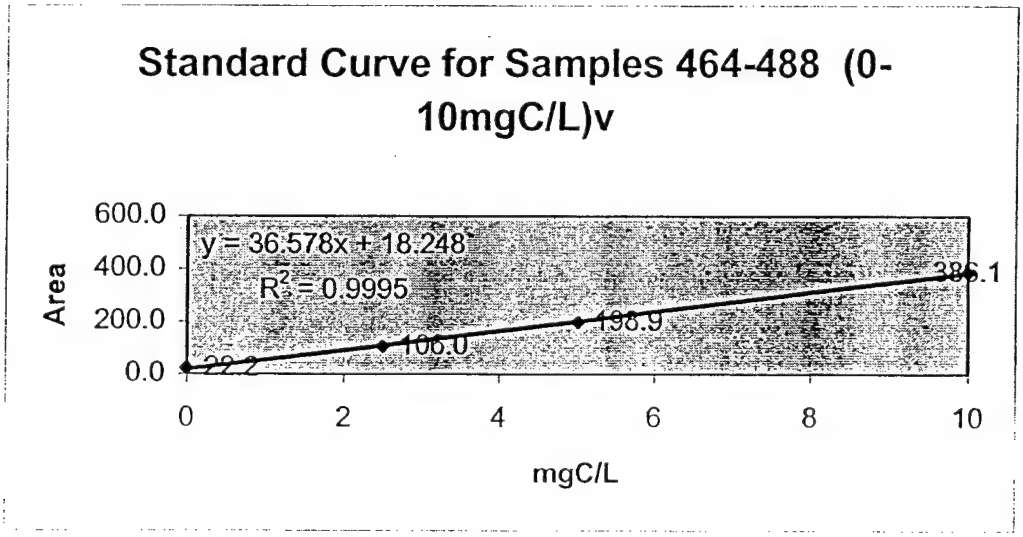
Analysis ID	Sample ID	File	Peak 1	Peak 2	Peak 1 TOC (mgC/L)	Peak 2 TOC (mgC/L)	Average TOC mgC/L	Std Dev mgC/L
439	TC301	090800samp11.CHR	279.866	271.782	7.25	7.03	7.14	0.16
440	TC303	090800samp12.CHR	357.08	345.204	9.38	9.05	9.22	0.23
441	TC305	090800samp13.CHR	299.291	297.193	7.79	7.73	7.76	0.04
442	TC307	090800samp14.CHR	233.201	220.978	5.96	5.63	5.79	0.24
443	TC309	090800samp15.CHR	175.775	165.189	4.38	4.09	4.23	0.21
444	TC311	090800samp16.CHR	321.12	313.556	8.39	8.18	8.29	0.15
445	TC313	090800samp17.CHR	292.038	289.847	7.59	7.53	7.56	0.04
446	TC315	090800samp18.CHR	225.853	221.31	5.76	5.63	5.70	0.09
447	TC317	090800samp19.CHR	180.239	169.601	4.50	4.21	4.35	0.21
448	TC319	090800samp20.CHR	130.924	118.972	3.14	2.81	2.97	0.23
449	TC321	090800samp21.CHR	270.412	269.159	6.99	6.96	6.97	0.02
450	TC323	090800samp22.CHR	282.962	276.512	7.34	7.16	7.25	0.13
451	TC325	090800samp23.CHR	199.638	190.288	5.04	4.78	4.91	0.18
452	TC327	090800samp24.CHR	148.869	145.523	3.63	3.54	3.59	0.07
453	TC329	090800samp25.CHR	269.495	271.517	6.96	7.02	6.99	0.04
454	TC331	090800samp26.CHR	318.434	316.996	8.32	8.28	8.30	0.03
455	TC333	090800samp27.CHR	278.236	275.936	7.21	7.14	7.17	0.04
456	TC302	090800samp28.CHR	266.461	255.183	6.88	6.57	6.73	0.22
457	TC322	090800samp29.CHR	281.46	271.512	7.29	7.02	7.16	0.19
458	TC335	090800samp30.CHR	229.366	223.823	5.86	5.70	5.78	0.11
459	TC337	090800samp31.CHR	167.811	162.716	4.16	4.02	4.09	0.10
460	TC339	090800samp32.CHR	291.587	288.064	7.57	7.48	7.53	0.07
461	TC341	090800samp33.CHR	305.639	304.788	7.96	7.94	7.95	0.02
462	TC342	090800samp34.CHR	294.545	293.446	7.66	7.63	7.64	0.02
463	TC343	090800samp36.CHR	438.311	468.786	11.63	12.47	12.05	0.59



Yintercept= 17.221 Slope= 36.222

TOC Sample Data

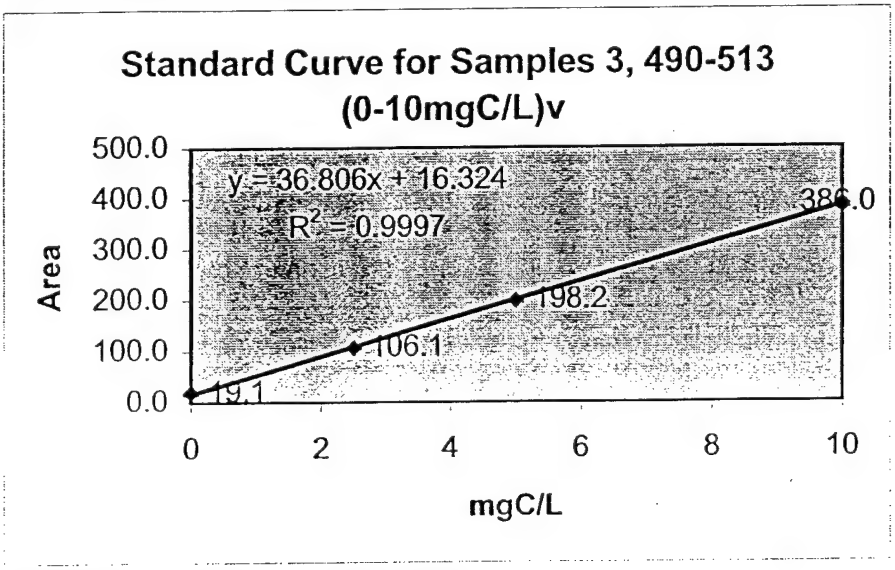
Analysis ID	Sample ID	File	Peak 1	Peak 2	Peak 1 TOC (mgC/L)	Peak 2 TOC (mgC/L)	Average TOC mgC/L	Std Dev mgC/L	Comments
464	DC303	090900samp03.CH	299.968	307.189	7.70	7.90	7.80	0.14	
465	DC305	090900samp04.CH	255.18	256.141	6.48	6.50	6.49	0.02	
466	DC307	090900samp05.CH	184.905	182.372	4.56	4.49	4.52	0.05	
467	DC309	090900samp06.CH	145.019	136.236	3.47	3.23	3.35	0.17	
468	DC311	090900samp07.CH	285.703	289.032	7.31	7.40	7.36	0.06	
469	DC313	090900samp08.CH	1263.2	1263.9	34.04	34.05	34.05	0.01	Seems High
470	DC315	090900samp09.CH	204.344	194.64	5.09	4.82	4.96	0.19	
471	DC317	090900samp10.CH	151.801	146.764	3.65	3.51	3.58	0.10	
472	DC319	090900samp11.CH	117.11	113.522	2.70	2.60	2.65	0.07	
473	DC321	090900samp12.CH	271.134	290.032	6.91	7.43	7.17	0.37	
474	DC322	090900samp13.CH	279.305	277.176	7.14	7.08	7.11	0.04	
475	DC323	090900samp14.CH	247.265	243.672	6.26	6.16	6.21	0.07	
476	DC325	090900samp15.CH	186.934	181.584	4.61	4.47	4.54	0.10	
477	DC327	090900samp16.CH	151.399	151.004	3.64	3.63	3.63	0.01	
478	DC329	090900samp17.CH	126.88	118.6	2.97	2.74	2.86	0.16	
479	DC331	090900samp18.CH	523.048	531.297	13.80	14.03	13.91	0.16	Seems High
480	DC333	090900samp19.CH	293.882	297.617	7.54	7.64	7.59	0.07	
481	DC301	090900samp20.CH	259.498	255.459	6.60	6.49	6.54	0.08	
482	DC302	090900samp21.CH	254.7	241.8	6.46	6.11	6.29	0.25	
483	DC335	090900samp22.CH	247.773	253.126	6.27	6.42	6.35	0.10	
484	DC337	090900samp23.CH	190.56	190.794	4.71	4.72	4.71	0.00	
485	DC339	090900samp24.CH	1063.544	1055.791	28.58	28.37	28.47	0.15	Seems High
486	DC341	090900samp25.CH	271.504	278.554	6.92	7.12	7.02	0.14	
487	DC342	090900samp26.CH	259.678	248.202	6.60	6.29	6.44	0.22	
488	DC343	090900samp27.CH	266.253	270.59	6.78	6.90	6.84	0.08	



Yintercept= 18.248 Slope= 36.578

TOC Sample Data

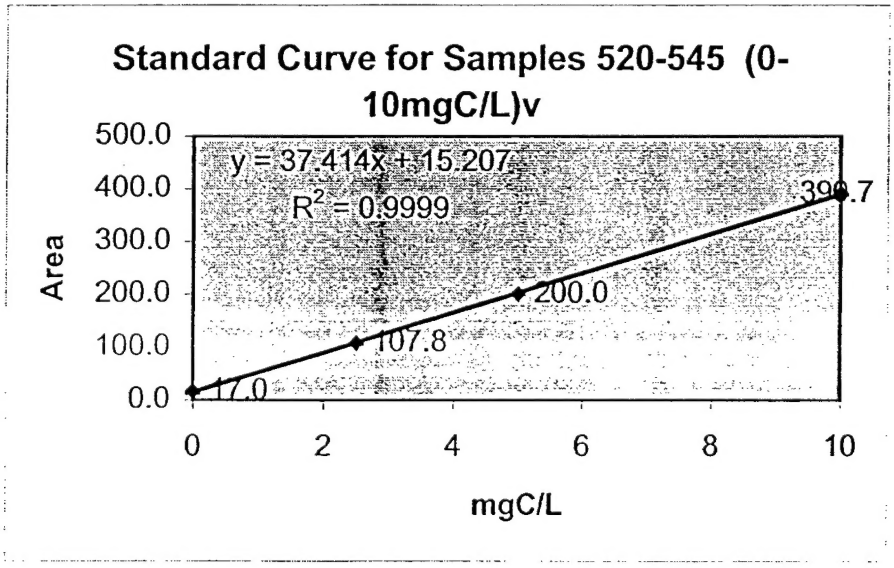
Analysis ID	Sample ID	File	Peak 1	Peak 2	Peak 1 TOC (mgC/L)	Peak 2 TOC (mgC/L)	Average TOC mgC/L	Std Dev mgC/L	Comments
3	TC346	091000samp09.CHR	311.4	316.3	8.02	8.15	8.08	0.09	
490	TC347	091000samp10.CHR	211.7	198.8	5.31	4.96	5.13	0.25	
491	TC349	091000samp11.CHR	228.9	166.4	5.78	4.08	4.93	1.20	
492	TC351	091000samp12.CHR	350.1	314.6	9.07	8.10	8.59	0.68	DUPS
493	TC352	091000samp12.CHR	297.9	302.4	7.65	7.77	7.71	0.09	DUPS
494	TC353	091000samp16.CHR	250.4	299.7	6.36	7.70	7.03	0.95	
495	TC355	091000samp17.CHR	214.9	205.8	5.40	5.15	5.27	0.17	
496	TC357	091000samp18.CHR	165.3	170	4.05	4.18	4.11	0.09	
497	TC361	091000samp19.CHR	284.9	283.9	7.30	7.27	7.28	0.02	
498	TC363	091000samp20.CHR	302.5	294.9	7.78	7.57	7.67	0.15	
499	TC365	091000samp21.CHR	288.1	277.8	7.38	7.10	7.24	0.20	DUPS
500	TC367	091000samp22.CHR	243.6	240.3	6.18	6.09	6.13	0.06	DUPS
501	TC371	091000samp23.CHR	281.2	284.6	7.20	7.29	7.24	0.07	
502	TC372	091000samp24.CHR	274.9	275.2	7.03	7.03	7.03	0.01	
503	TC373	091000samp25.CHR	289.9	294.5	7.43	7.56	7.50	0.09	
504	TC375	091000samp26.CHR	255.5	255.1	6.50	6.49	6.49	0.01	
505	TC377	091000samp27.CHR	205.9	178.9	5.15	4.42	4.78	0.52	
506	TC379	091200samp01	159.07	152.21	3.88	3.69	3.79	0.13	DUPS
507	TC381	091200samp02	144.84	133.5	3.49	3.18	3.34	0.22	DUPS
508	TC383	091200samp03	272.71	275.78	6.97	7.05	7.01	0.06	
509	TC385	091200samp04	266.76	266.45	6.80	6.80	6.80	0.01	
510	TC387	091200samp05	202.13	200.82	5.05	5.01	5.03	0.03	
511	TC389	091200samp06	175.6	170.17	4.33	4.18	4.25	0.10	
512	TC391	091200samp07	276.32	286.21	7.06	7.33	7.20	0.19	
513	TC392	091200samp08	268.87	271.94	6.86	6.95	6.90	0.06	



Yintercept 16.32 Slope= 36.806

TOC Sample Data

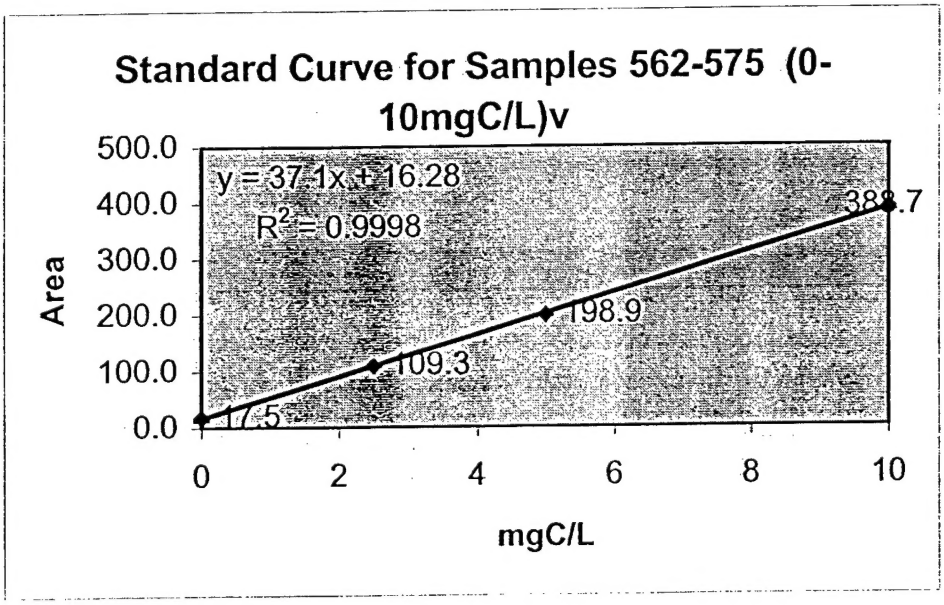
Analysis ID	Sample ID	File	Peak 1	Peak 2	Peak 1 TOC (mgC/L)	Peak 2 TOC (mgC/L)	Average TOC mgC/L	Std Dev mgC/L	Comments
520	DC346	091200samp23.CHR	266.8	268.39	6.72	6.77	6.75	0.03	
521	DC347	091200samp24.CHR	154.73	146.76	3.73	3.52	3.62	0.15	
522	DC349	091200samp25.CHR	128.22	120.88	3.02	2.82	2.92	0.14	
523	DC351	091200samp26.CHR	234.25	244.2	5.85	6.12	5.99	0.19	
524	DC352	091200samp27.CHR	246.21	245.15	6.17	6.15	6.16	0.02	DUPS
525	DC353	091200samp28.CHR	229.2	232	5.72	5.79	5.76	0.05	DUPS
526	DC355	091200samp29.CHR	174.75	171.84	4.26	4.19	4.23	0.05	
527	DC357	091200samp30.CHR	147.34	143.78	3.53	3.44	3.48	0.07	
528	DC361	091200samp31.CHR	527.58		13.69		13.69	#DIV/0!	
529	DC363	091200samp32.CHR	835.96	825.56	21.94	21.66	21.80	0.20	
530	DC365	091200samp33.CHR	794.16	784.67	20.82	20.57	20.69	0.18	
531	DC367	091200samp34.CHR	800.05	799.65	20.98	20.97	20.97	0.01	DUPS
532	DC369	091200samp35.CHR	813.95	796.41	21.35	20.88	21.11	0.33	DUPS
533	DC371	091200samp36.CHR	250.98	243.91	6.30	6.11	6.21	0.13	
534	DC372	091200samp37.CHR	360.12	360.72	9.22	9.23	9.23	0.01	
535	DC373	091200samp38.CHR	268.69	272.44	6.78	6.88	6.83	0.07	
536	DC375	091200samp39.CHR	232.06	228.9	5.80	5.71	5.75	0.06	
537	DC377	091200samp40.CHR	169.2	167.49	4.12	4.07	4.09	0.03	
538	DC379	091200samp41.CHR	138.91	135.89	3.31	3.23	3.27	0.06	
539	DC381	091200samp42.CHR	128.89	129.01	3.04	3.04	3.04	0.00	
540	DC383	091200samp43.CHR	258.09	261.02	6.49	6.57	6.53	0.06	
541	DC385	091200samp44.CHR	243.25	244.12	6.10	6.12	6.11	0.02	
542	DC387	091200samp45.CHR	177.64	173.47	4.34	4.23	4.29	0.08	
543	DC389	091200samp46.CHR	160.64	155.63	3.89	3.75	3.82	0.09	
544	DC391	091200samp47.CHR	272.12	272.97	6.87	6.89	6.88	0.02	
545	DC392	091200samp48.CHR	250.98	251.93	6.30	6.33	6.31	0.02	



Yintercept 15.207 Slope= 37.414

TOC Sample Data

Analysis ID	Sample ID	File	Peak 1	Peak 2	Peak 1 TOC (mgC/L)	Peak 2 TOC (mgC/L)	Average TOC mgC/L	Std Dev mgC/L	Comments
562	TC395	91200bsamp02.CH	288.51	278.72	7.34	7.07	7.21	0.19	
563	TC397	91200bsamp03.CH	232.05	225.39	5.82	5.64	5.73	0.13	DUPS
564	TC399	91200bsamp04.CH	162.16	147.66	3.93	3.54	3.74	0.28	DUPS
565	TC3101	91200bsamp05.CH	302.06	298.93	7.70	7.62	7.66	0.06	
566	TC3102	91200bsamp06.CH	314.64	301.93	8.04	7.70	7.87	0.24	
567	TC3103	91200bsamp07.CH	299.14	301.57	7.62	7.69	7.66	0.05	
568	TC3105	91200bsamp08.CH	278.74	272.8	7.07	6.91	6.99	0.11	
569	TC3107	91200bsamp09.CH	263.38	273.7	6.66	6.94	6.80	0.20	
570	TC3109	91200bsamp10.CH	194.5	192.19	4.80	4.74	4.77	0.04	
571	TC3111	91200bsamp12.CH	285.97	293.72	7.27	7.48	7.37	0.15	
572	TC3113	91200bsamp13.CH	280.51	275.57	7.12	6.99	7.06	0.09	
573	TC3115	91200bsamp14.CH	241.61	237.74	6.07	5.97	6.02	0.07	
574	TC3117	91200bsamp15.CH	182.11	178.55	4.47	4.37	4.42	0.07	
575	TC3119	91200bsamp16.CH	143.53	135.99	3.43	3.23	3.33	0.14	



Yintercept 16.28 Slope= 37.1

SAMPLE ID	TKN mg/l	SAMPLE ID	TKN mg/l
K396	0.88	K390	2.73
K383	0.95	K3113	0.85
388A	0.96	K3106	1.23
3108	0.90	K3107	1.37
395	0.86	K3119	0.99
3105	0.74	K3117	1.13
K360	0.71	K342	0.88
3104	1.11	K368	0.76
K384	1.01	K339	1.18
K389A	0.90	K373	0.96
K382	0.72	K3100	1.18
3101	1.05	K372	0.77
K385	0.93	K3114	0.86
K340	0.72	K391	0.97
K389B	0.56	K352	1.09
K388B	1.17	K354	1.07
K386	1.29	K375	0.67
K387	1.23	K376	1.12

Event 3

SAMPLE ID	TKN mg/l	SAMPLE ID	TKN mg/l
K348	1.21	K306	0.73
K329	0.97	K326	0.55
K379	1.03	K310	1.20
K321	1.23	K314	1.71
K347	1.21	K336	0.82
K353	0.67	K331	1.15
K355	0.84	K301	0.90
K3116	1.28	K367	1.12
K327	1.01	K365	1.31
K316	0.88	K337	0.92
K330	1.14	K322	1.01
K308	1.13	K319	1.06
K364	1.13	K302	1.33
K346	0.98	K317	~~1.28~~ 0.99
K328	1.30	K307	1.23
K359	1.28		
K349	1.14		
K312	0.56		
K300	1.28		